ANNUAL SESSION • NEW YORK CITY • JUNE 1-5, 1953

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THE JOURNAL

OF THE

American Medical Association

Volume 151, No. 14 — Published Weekly at 535 North Dearborn Street, Chicago 10, Illinois. Subscription, $15. Single Copy, 45 cents — April 4, 1953

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Symposium on the Surgery of Cancer

All of the 20 articles in this *Symposium on the Surgery of Cancer* were prepared in the great hospitals of New York City. The Symposium appears in the April Number of the SURGICAL CLINICS OF NORTH AMERICA and is typical of the practical level of presentation *always* found in the Clinics.

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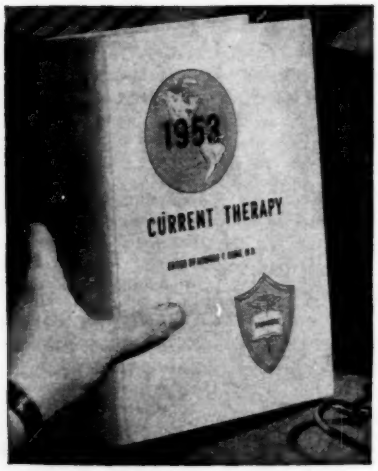

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THE JOURNAL of the American Medical Association is published weekly by the American Medical Association. Subscription price, $15.00 a year, 45c a copy. Canadian $16.50. Foreign $19.00. Entered as second class matter June 25, 1885, at the Postoffice at Chicago, Ill., under act of March 3, 1879. Address all communications to American Medical Association, 535 N. Dearborn St., Chicago 10, Illinois

THE JOURNAL

of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 151, NO. 14 — CHICAGO, ILLINOIS — APRIL 4, 1953
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ANTIBIOTICS IN ACUTE BACILLARY DYSENTERY

OBSERVATIONS IN 1,408 CASES WITH POSITIVE CULTURES

Lieut. Bernard T. Garfinkel (MC), U. S. Army Reserve, Lieut. Gerald M. Martin † (MC), U. S. N.
James Watt, M.D., Bethesda, Md., Capt. Fred J. Payne (MC), U. S. Army Reserve
Col. Richard P. Mason (MC), U. S. Army
and
Albert V. Hardy, M.D., Jacksonville, Fla.

Bacillary dysentery historically is a disease of major importance to confined population groups. Epidemics occur repeatedly aboard ship, in institutions for the mentally defective and mentally ill, and in orphanages, jails, and prison camps. Experience with dysentery in the United Nations prisoner-of-war camp in Korea followed this historical pattern, despite the preventive measures instituted by the authorities. An important contributing factor to this lack of effectiveness was the high endemic level of infection at the time of capture. Bacteriological examination of 1,000 prisoners at the time they were brought to the camp showed 8% to be infected with pathogenic Shigella. During the past decade sulfonamide therapy has been established as highly effective in shigellosis.[1] The treatment of the sick persons in Korea was complicated by the fact that almost all the cases of bacillary dysentery were due to sulfonamide-resistant shigellae. This finding, based first on clinical observations, was supported later by in vitro sensitivity tests. Thus the physicians responsible for medical care had available only nonspecific supportive therapy. There was urgent need for specific medication to replace sulfonamides. In limited trials elsewhere the newer antibiotics had been reported to be effective.[2] Their usage and more exact evaluation was indicated.

The prisoner-of-war camp was composed of a number of enclosures and, within these, a series of compounds. Each of the latter had a dispensary staffed by Korean physicians, the majority of whom were prisoners of war. These physicians held sick call and were furnished drugs for the symptomatic treatment of all patients who did not require hospitalization. Hospital care was provided for the seriously ill as well as for patients who did not respond to therapy in the compounds. Records indicated that from each 15 to 30 patients with diarrheal disease seen in the different dispensaries, only 1 was admitted to the hospital. Our attention was limited to hospitalized patients.

Diagnostic studies established that the outbreak of diarrheal disease was not caused by a single etiological agent but rather by a variety of enteric pathogens. The majority of the cases were of bacillary dysentery. Salmonella infections constituted a small proportion, and about 10% in the hospitalized group were acute amebic dysentery. All patients were given a complete physical examination on admission. The first concern was to

---

† Lieutenant Martin died on Sept. 27, 1951.

Director of Laboratories, Florida State Board of Health (Dr. Hardy).

The following bacteriologists cooperated in this study: Ens. David Hamerick (MSC), U. S. N., Dwight Frazier and Don Mackel, bacteriologists, Bureau of Laboratories, Florida State Board of Health, and Kelsey C. Milner, Senior Assistant Scientist, United States Public Health Service.

All antibiotics used in this study were contributed by the following firms: aureomycin, Lederle Laboratories, Division of American Cyanamid Company, Pearl River, N. Y.; chloramphenicol, Parke Davis & Company, Detroit; oxytetracycline ("terramycin"), Charles Pfizer & Company, Inc., Brooklyn; polymyxin B, Burroughs Wellcome & Company, Inc., Tuckahoe, N. Y.

The laboratory technical assistance in Korea was provided by the Fleet Epidemic Disease Control Unit No. 1 and the 64th Field Hospital; definitive typing of Shigella and the study of atypical organisms was performed under the supervision of Lieut. Col. Robert Lindberg in the 406th Medical General Laboratory and by Mildred Galton and associates in the Bureau of Laboratories, Florida State Board of Health.

The studies here reported were conducted by a "Joint Dysentery Unit" under the sponsorship of the Commission on Enteric Infections of the Armed Forces Epidemiological Board. Those participating in the study in Korea came from the Army Medical Service Graduate School, the Fleet Epidemic Disease Control Unit No. 1, the Microbiological Institute and the Communicable Disease Center of the United States Public Health Service, the 406th Medical General Laboratory, the 64th Field Hospital, the Bureau of Laboratories of the Florida State Board of Health, Jacksonville, Fla., and Louisiana State University School of Medicine, New Orleans.

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2. Ross, S., and others: Chloramphenicol (Chloromycetin®) Therapy in Shigella Enteritis, J. A. M. A. **143**: 1459 (Aug. 26) 1950. Mazursky, M. M.: Clinical Trial with Chloromycetin in Shigella Dysenteriae (Sonne): Report of 3 Cases, J. Pediat. **37**: 238, 1950. Cooper, M. L., and Keller, H. M.: Dysentery Due to Sulfonamide-Resistant Shigella Sonnei Controlled with Chloromycetin, Am. J. Dis. Child. **80**: 911 (Dec.) 1950. Sime, D. A., and Cameron, D.: Persistent Bacillary Dysentery Carrier Treated with Chloramphenicol, Brit. M. J. **1**: 997, 1951. Ross, S., and others: Use of Aerosporin (Polymyxin B) in Specific and Nonspecific Enteritis in Infants and Children, M. Ann. District of Columbia **18**: 441, 1949.

administer fluid and electrolyte therapy. As soon as possible after this, specimens were obtained for bacteriological and parasitological study, and a diagnostic sigmoidoscopic examination was completed. Patients were assigned to wards according to the established or tentative diagnoses, and specific therapy was instituted without delay.

CLINICAL FEATURES WITH REPORT OF A CASE

The bacillary dysentery in the cases in this series was severe, conforming to the classical description as found in the older medical literature, a remarkable contrast to the comparatively mild watery diarrhea that is the usual manifestation of Shigella infection in young adults in this country. The character of the infection under study is illustrated by a representative case record.

S. S. L., a 22-year-old North Korean, was admitted to the hospital because of bloody diarrhea and abdominal pain. This patient had been well until five days before admission, when there was a sudden onset of diarrhea and low abdominal cramps. Within two days his diarrhea had become much severer, and he had 10 to 20 stools a day. Each bowel movement was associated with severe tenesmus. Two days before admission his stools became grossly bloody, and he had an almost constant desire to defecate. The stool often was only a small amount of mucus and blood. On admission to the hospital the patient had a temperature of 100 F. He was well nourished, but there were signs of moderate dehydration. There was generalized abdominal tenderness, with some rebound tenderness in the lower quadrants. The abdomen had a doughy feeling. Sigmoidoscopic examination revealed hyperemia of the entire mucosa, with moderate edema. There was an intense outpouring of mucus and pus that coated the mucosa. Grossly, the stool specimen was a mixture of blood, mucus, and pus; microscopically, it was filled with pus cells. Cultures taken on admission were positive for S. flexneri 3.

TABLE 1.—*Bacteriological Response to Therapy in Acute Bacillary Dysentery*

Treatment	No. of Patients Treated	Cases Culturally Positive at Intervals After Beginning of Treatment, %			
		0* Days	2 Days	4 Days	7 Days
Supportive	224	100	73	42	29
Sulfadiazine	146	100	55	35	25
Polymyxin B	135	100	45	22	12
Chloramphenicol	321	100	12	5	1
Aureomycin	308	100	5	2	1
Oxytetracycline	274	100	7	3	0

* Immediately prior to start of therapy.

Tabulated data on 1,408 bacteriologically positive cases of bacillary dysentery included in this series showed that most patients had been ill from four to six days before admission. One-third had had over 15 stools daily; virtually all reported exudate, and almost 90% had observed blood. Abdominal pain was the most frequent major complaint, and usually there was associated tenesmus. Nausea was rarely troublesome and was reported by only 12%. Feverishness was mentioned by one-half, and an elevation of oral temperature to 100 F and above was found in 43%. Palpation of the abdomen revealed voluntary tenseness of abdominal muscles and tenderness on deep pressure frequently associated with rebound pain. True muscle spasm was a rare finding. All of the patients appeared ill, and 16% had gross evidence of dehydration.

The characteristic sigmoidoscopic observations were those of a diffuse inflammatory process. The lumen ordinarily contained large amounts of mucopurulent exudate unmixed with fecal residue. In some cases, the mucosa would be obscured by a diffuse coating of greyish sticky pus; in others, droplets of pus would ooze from the mucosal crypts with the pressure of the advancing sigmoidoscope. Ulceration was uncommon, but, when seen, the ulcers were shallow, irregular, and covered with purulent exudate; they varied from 2 mm. to 2 cm. in diameter. Submucosal ecchymotic areas were visible in the acute stage, but were more striking when the inflammation subsided. The cellular exudate was composed chiefly of polymorphonuclear leukocytes, with some large mononuclear cells. The latter were not sufficiently constant in character or number to have diagnostic significance.

TABLE 2.—*Relative Efficacy of Three Antibiotics at Varying Dosage Levels in Acute Bacillary Dysentery*

Medicament	Dosage	Total No. of Patients	Cases Culturally Positive at Intervals After Beginning of Treatment, %			
			0* Days	2 Days	4 Days	7 Days
Aureomycin	10 gm. in	96	100	8	4	1
Chloramphenicol	4 days	85	100	14	13	1
Oxytetracycline		94	100	13	5	0
Total		275	100	12	7	1
Aureomycin	2 gm. single	36	100	3	3	3
Chloramphenicol	dose	39	100	18	10	5
Oxytetracycline		48	100	6	4	0
Total		123	100	9	6	2
Aureomycin	4 gm. in	51	100	2	2	2
Chloramphenicol	7 days	41	100	12	0	0
Oxytetracycline		48	100	2	0	0
Total		140	100	5	1	1
Aureomycin	4 gm. in	125	100	3	0	0
Chloramphenicol	24 hr.	156	100	9	1	1
Oxytetracycline		84	100	2	1	0
Total		365	100	6	1	†

* Immediately preceding the start of treatment.
† Less than 0.5.

RELATIVE EFFICACY OF THERAPEUTIC AGENTS

Evaluation of therapy was simplified by the uniform nature of the affected group. All patients were young or middle-aged adult males who for several months had lived in the same environment and received the same type of food in similar amounts. Further comparability was assured by assigning the patients in rotation to predetermine therapeutic schedules. Four antibiotics were compared with the therapeutic agents available to the

TABLE 3.—*Efficacy of Various Methods of Therapy as Determined by Sigmoidoscopic Examination on Fourth Day of Therapy in 499 Culturally Positive Cases*

Therapy	No. of Patients Observed	Continuing Active Colitis	
		No.	%
Supportive	86	42	49
Sulfonamide	60	25	42
Polymyxin	106	45	42
Antibiotics: 2 gm. single dose	56	11	20
Antibiotics: 4 gm. in 7 days	91	20	22
Antibiotics: 4 gm. in 24 hr.	100	4	4

prison authorities. The primary objective was to determine whether or not standard dosages of chloramphenicol, aureomycin, oxytetracycline ("terramycin"), and polymyxin B were more effective than the sulfadiazine and supportive therapy that was being used. The observation that chloramphenicol, aureomycin, and oxytetracycline were all highly active therapeutic agents led to studies to establish a minimum effective dosage.

Patients were assigned to therapy for bacillary dysentery on the basis of a presumptive clinical diagnosis. Data on 1,408 patients from whom shigellae were isolated are used in this analysis. Six types of treatment were used. Supportive therapy consisted of bed rest, fluid and electrolyte replacement, and administration of sedatives as needed and nutritional supplements. Sulfadiazine was used in two dosages, each with 2 gm. given immediately, one with 1 gm. four times a day for four days, the other with 2 gm. three times a day for five days. Polymyxin B also was used orally in two dosage levels, 50 mg. twice a day for seven days and 100 mg. four times a day for five days. The three other antibiotics, aureomycin, chloramphenicol, and oxytetracycline were each used in four dosages: (1) 10 gm. total, 2 gm. given at once and 0.5 gm. four times a day for four days; (2) 4 gm. total, given as 0.5 gm. at once and 0.25 gm. twice a day for seven days; (3) 4 gm. total given as 2 gm. at once and 1 gm. after 12 and 24 hours; (4) 2 gm. as a single dose.

Early in the study daily follow-up cultures were done, but later this was reduced to four cultures in the first week following the beginning of therapy. Observation continued for two weeks after the completion of therapy, and during this time four additional cultures were made. The case was recorded as continuously positive if the variety of shigella isolated in the pretreatment culture was found in any subsequent culture, even though intervening tests were negative. The case was counted culturally negative only when all subsequent examinations during that hospital admission failed to isolate the type of Shigella previously found.

The bacteriological findings, a wholly objective measure of therapeutic response, are summarized in table 1. All but 29% of the patients on supportive therapy had negative cultures on the seventh day of treatment and continued to have negative cultures thereafter. There was a gradual decline throughout the week in the proportion of culturally positive cases. Sulfadiazine did not modify this course to a significant degree. Clinically, a case was noted occasionally that would respond well, and this was in agreement with in vitro sensitivity tests, which revealed that an occasionally seen culture was sensitive to sulfonamides while most were highly resistant to these drugs. There was no significant difference in the response to the smaller and larger doses. Shigella infections did not respond well to polymyxin B with either dosage used. It modified the course of the infection to only a slight degree. The three antibiotics, aureomycin, chloramphenicol, and oxytetracycline, were all effective therapeutic agents, with aureomycin and oxytetracycline slightly superior to chloramphenicol. The rapid reversion from positive to negative cultures was striking. By the seventh day, all, as with oxytetracycline, or almost all, as with aureomycin and chloramphenicol, were culturally negative and remained so for the follow-up period. These three antibiotics were used at the four dosage levels. There was notably little difference in the responses as shown in table 2. All dosages, even the 2 gm. single doses, were satisfactory as judged by the bacteriological findings. A low dosage appeared to be adequate even for these severe enteric infections.

Follow-up sigmoidoscopic examinations on the fourth day after the beginning of therapy were used to further evaluate therapeutic response in 499 cases (table 3). About one-half the patients who did not receive specific therapy had persisting sigmoidoscopic evidence of active colitis on the fourth day. The proportion dropped to 42% when patients were given sulfonamides or polymyxin B. With the other three antibiotics given in a single 2 gm. dose or in the 4 gm. dose over seven days the percentages with active colitis were, respectively, 20 and 22; however, with 4 gm. given in 24 hours, all but 4% were judged free of active colitis by the fourth day. Follow-up sigmoidoscopic tests were not being performed on the patients with early cases, who received the 10 gm. total dose of these antibiotics.

A variety of other measures of therapeutic response were used. The character of each stool was observed and recorded. Information on the decrease in number of stools and the disappearance of exudate was available. The physician's daily notes also indicated the clinical status of the patient. All observations when analyzed paralleled the findings reported above. The results of therapy were analyzed also according to the type of Shigella isolated. No significant variation in therapeutic response by type of Shigella was noted.

COMMENT

The observations reported here were based on types of cases that historically are characteristic of bacillary dysentery. Disease of this degree of severity is not found ordinarily in general population groups in the United States, and it is proper to question the extent to which the results reported have general application. The organisms responsible for these severe illnesses were similar to those seen in other parts of the world. No unique types were isolated. The Flexner group predominated, and the more feared Shiga bacillus was found in fewer than 1 of every 200 cases. There is reason to believe that, to the extent cases seen elsewhere are due to the same types of Shigella, clinical response would be equally satisfactory. Shigella sonne was not common in this group (less than 3%), and since this organism has generally been more resistant to sulfonamide therapy, conclusions respecting this infection should be more guarded.

SUMMARY

Oxytetracycline ("terramycin"), aureomycin, and chloramphenicol were effective in treating sulfonamide-resistant shigellosis in Korea. Four grams in three doses in 24 hours gave as satisfactory results as the larger doses ordinarily employed and better results than the same amount over a longer period or one-half as much in a single dose. Polymyxin B was a much less effective therapeutic agent.

P. O. Box 210 (1) (Dr. Hardy).

EARLY TRACHEOTOMY IN ANTERIOR POLIOMYELITIS

IMPORTANCE OF VITAL CAPACITY DETERMINATIONS

Fletcher McDowell, M.D.
and
Harold G. Wolff, M.D., New York

Tracheotomy in bulbar poliomyelitis and spinal poliomyelitis with respiratory failure has only one purpose, and that is to keep the airway open and accessible. With an assured airway, secretions can easily be removed at all times, prevention of atelectasis and consolidation becomes a more likely possibility, and oxygen delivery to and carbon dioxide removal from the alveoli are more certain to occur. The usual indications for tracheotomy in poliomyelitis have been the accumulation of secretions in the tracheobronchial tree, abrupt closure of the airway from laryngospasm, and hypoxia and hypercapnia, with cyanosis, delirium, restlessness, and coma.[1] Through blocking of the airway, hypoxia and hypercapnia may be sudden in onset, dramatic in character, and easily detected by observation. More often the filling of the airway with secretions and symptoms of hypoxia and hypercapnia have a gradual and insidious development, which may often be mistakenly attributed to progression of the infectious process in the nervous system.

The complications that follow development of hypoxia and hypercapnia may seriously endanger the patient's life and may be more damaging than poliomyelitis itself. A prophylactic tracheotomy is one that is done before these complications develop and before the procedure becomes technically difficult because of severe ventilatory failure. Therefore, suitable indications for tracheotomy that occur early and that are reliable and easily determined are a necessity. Any procedure designated as prophylactic must carry with it the chance of being unnecessary, but this chance is easily acceptable when the advantages outweigh the attendant risks. The danger to survival associated with hypoxia and hypercapnia cannot be compared to the slight surgical risk and the minor disfigurement of tracheotomy.

Early indications for tracheotomy that can be determined easily by simple clinical methods will be described and evidence to support their use will be presented. If these signs are sought for and heeded in patients with bulbar and spinal poliomyelitis with respiratory insufficiency and if early tracheotomy is carried out, prevention of hypoxia and hypercapnia will result. The following five case reports will serve to outline the indications that have been followed in deciding when a tracheotomy should be done and to illustrate the complications that may occur if the procedure is omitted or delayed.

REPORT OF CASES

CASE 1 (fig. 1).—J. P., a 20-year-old white woman, was admitted to the hospital with a two day history of fever, headache, backache, and stiff neck. Physical examination revealed a rigid neck and tight hamstrings and a temperature of 39.4 C (102.9 F). Lumbar puncture and examination of the spinal fluid showed an initial pressure of 74 mm. of water, a protein level of 71 mg. per 100 cc., and 510 cells, of which 92% were polymorphonuclear leukocytes. The day after admission weakness of the left leg was evident, and the following day both lower extremities were paralyzed, and weakness of both arms was noted. The vital capacity, which had been 2,400 cc. on admission, was observed to be 1,200 cc. on the morning of the third hospital day and was 900 cc. when measured later in the afternoon of the same day. At this time the patient had slight respiratory distress, as evidenced by an increase in her respiratory rate and complaints of fatigue.

Because the need for artificial respiration was apparent, a tracheotomy was immediately performed without difficulty, with the patient under local anesthesia. Following the tracheotomy, she was placed in a Drinker-Collins respirator. During the next two days, her vital capacity fell to 108 cc., and examination in the respirator revealed complete quadriplegia. Her temperature returned to normal on the sixth hospital day, and, because her ventilation was improving steadily, she was transferred to a rocking bed the following day. On the 26th hospital day, the patient no longer needed any form of artificial respiration. Her tracheotomy was not closed, however, until the 174th hospital day, when her vital capacity had reached 1,500 cc.[2] Throughout her stay in the respirator and during the period when her vital capacity was dangerously low, she showed no evidence of cyanosis, obstruction of the airway, or atelectasis. Shortly after closure of the tracheotomy, she was transferred to another hospital for further rehabilitation.

CASE 2 (fig. 2).—D. S., a 34-year-old white woman, was admitted to the New York Hospital because of back pain, headache, fever, and stiff neck of five days' duration. She was three months pregnant at the time of the onset of these symptoms. One day before admission she noted that her legs were weak and that she was unable to stand. On admission she was found to have a stiff neck, paralysis of both lower extremities, weak upper extremities, and difficulty in breathing. Her temperature was 39.1 C (102.4 F), and lumbar puncture showed an initial spinal fluid pressure of 240 mm. of water, 354 cells (96% lymphocytes), and a spinal fluid protein level of 71 mg. per 100 cc. Her vital capacity on admission was 1,000 cc., and two hours later it was 800 cc. (fig. 2). A tracheotomy was performed, with the patient under local anesthesia, and she was placed in a tank-type respirator. The day after tracheotomy was done her vital capacity was 300 cc. Her temperature returned to normal three days after admission, and on the sixth hospital day she was transferred to a rocking bed. On the eighth hospital day she no longer required any form of artificial respiration. Throughout this acute phase of her illness, no symptoms of hypoxia or hypercapnia were detected. A modified program

From the New York Hospital and the departments of medicine (neurology) and psychiatry, Cornell University Medical College.

Read before the New York Neurological Society and the Section on Neurology and Psychiatry of the New York Academy of Medicine, May 13, 1952.

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2. This level (1,500 cc.) has been used arbitrarily as that to which the vital capacity must rise before tracheotomies are closed. At this level, effective coughing is possible, and patients are no longer dependent on aid for clearing the tracheobronchial tree of secretions.

of rehabilitation was carried out until delivery of the infant, which occurred on the 153rd hospital day. Although the patient's vital capacity was 700 cc., she required no artificial respiration during delivery. Her hospital course and delivery were uncomplicated by respiratory infection, obstruction of the airway, or atelectasis. The tracheotomy was closed 295 days after admission when her vital capacity had risen to 1,500 cc. She was then transferred to another hospital for further rehabilitation.

Comment.—In both patients J. P. and D. S., before any respiratory distress had occurred, tracheotomy was performed when vital capacity had fallen to about 25% of the expected normal level and there was evidence that the paralysis was severe and rapidly progressive. In both cases, tracheotomy was done electively and without difficulty. Neither patient, during the time that the tracheotomy tube was in place or afterward showed any evidence of obstruction of the airway or hypoxia. Freedom from respiratory complications in these two patients cannot be attributed solely to tracheotomy; however, the smooth course and the ease of management in these patients were facilitated by the establishment

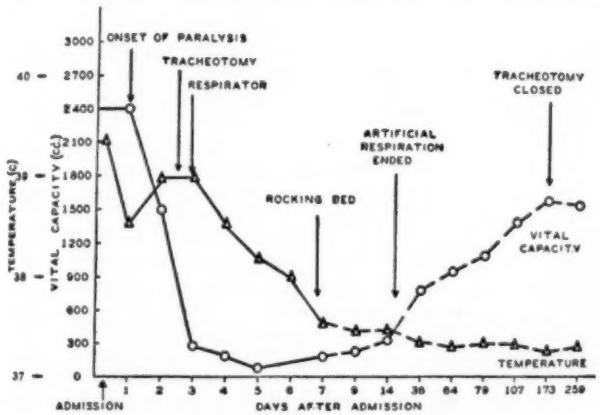

Fig. 1. (case 1).—Hospital course of patient J. P.

of an artificial airway before artificial respiration became necessary. It was especially important to take every precaution to guard the second patient from hypoxia or hypercapnia because of the presence of a 3-month-old fetus. The definite indications for early tracheotomy in these two patients were as follows: (1) a fall in vital capacity to a level just adequate to sustain the patient without artificial respiration (25% of the expected normal vital capacity); (2) evidence of severe paralysis; (3) rapid progression of paralysis; and (4) indication that further progression of the disease process was likely, suggested by the persistent elevation of temperature.

CASE 3 (fig. 3).—S. K., a 14-year-old white boy, was admitted to the hospital with a six day history of headache, sore throat, fever, vomiting, nasal voice, and difficulty in swallowing. On physical examination he was found to have a temperature of 39 C (102.2 F), paralysis of the palate with difficulty in swallowing and regurgitation of fluid through the nose, and weakness of the sternocleidomastoid muscles. Lumbar puncture revealed an initial spinal fluid pressure of 140 mm. of water, a spinal fluid protein level of 50 mg. per 100 cc., and 90 cells, of which 60% were polymorphonuclear leukocytes and 40% were lymphocytes. On the morning of admission, the patient's vital capacity was 4,300 cc. That evening his vital capacity was 2,800 cc., but he was able to cough and remove secretions from the upper respiratory tract without help. His respirations were at times irregular in rate and depth, but he was alert and comfortable.

Two days after admission, his temperature had returned to normal. His vital capacity was 2,200 cc., and he was having some difficulty in removing secretions, despite postural drainage and frequent suctioning. Three days after admission, although

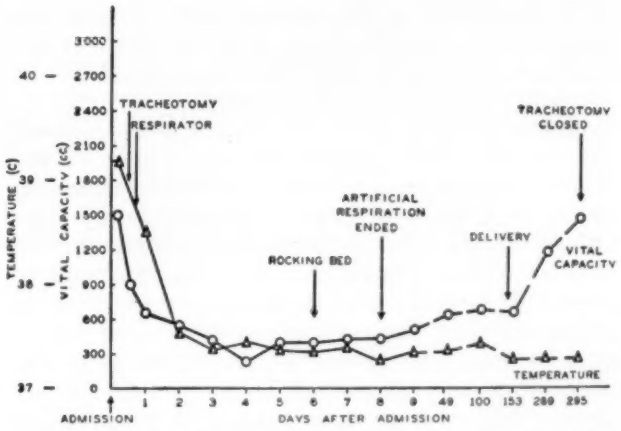

Fig. 2 (case 2).—Hospital course of patient D. S., who was three months pregnant at the time of admission.

his temperature remained normal, he was having increasingly greater difficulty in removing secretions, and he was noted to have increasingly irregular respirations and periods of apnea as long as 45 seconds. His vital capacity was unchanged and his carbon dioxide combining power was normal; however, he was restless and somnolent. The following day, despite continuous efforts to keep his airway clear, his ability to ventilate was greatly reduced, and his tidal air volume varied from 10 cc. to 300 cc. He soon became unresponsive to verbal stimuli and reacted only to noxious stimulation. Artificial respiration was initiated by means of a portable chest respirator of the cuirass type. An attempt to clear his airway by bronchoscopy had no effect in improving his ventilation, and he became cyanotic. An emergency tracheotomy was performed, followed by deep tracheal suctioning, with the removal of large amounts of clear mucus. The patient was placed in a respirator, and his cyanosis immediately cleared. At this time he was comatose,

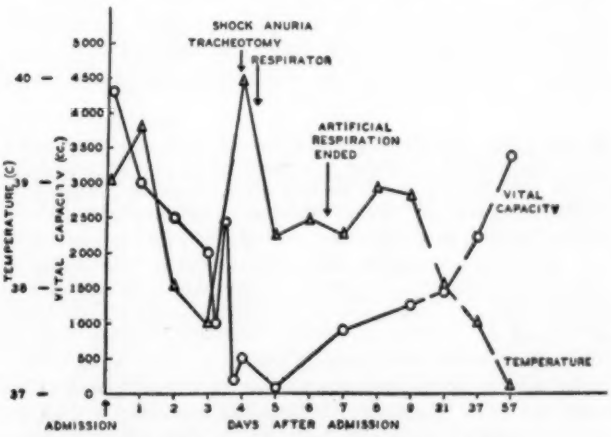

Fig. 3 (case 3).—Hospital course of patient S. K.

his blood pressure was unobtainable, and his apical cardiac rate was 160 beats per minute. He remained comatose for 12 hours, and for 24 hours thereafter he was disoriented. His blood pressure gradually returned to a normal level within 24 hours, but he was anuric for this period and for the following 12 hours. After 52 hours in the respirator, he was transferred to a rocking bed. His vital capacity had risen to 873 cc. On the third day after the tracheotomy was performed he no longer required artificial respiration. His tracheotomy was closed in

four months, when swallowing could be performed without difficulty and his vital capacity was 3,500 cc. At the time of discharge he had a slightly nasal voice and minimal weakness of the right deltoid muscle.

Comment.—This third case illustrates the dangers confronting a patient with medullary paralysis who shows irregularity in the rate and depth of respirations and who is having difficulty in removing secretions from the upper respiratory tract. An early tracheotomy was not performed because the patient's temperature returned to normal before severe complications appeared; however, the disease process progressed after his temperature had returned to normal, with increasing interference in pharyngeal function and respiratory center activity. It is obvious that tracheotomy should have been done when there was evidence of failing ventilation accompanied by inability to remove secretions from the respiratory tract. The hypoxic and hypercapnic encephalopathy that was present for about 24 hours after tracheotomy and the associated peripheral vascular collapse could have been as serious for this patient as any defect he might have suffered from bulbar poliomyelitis.

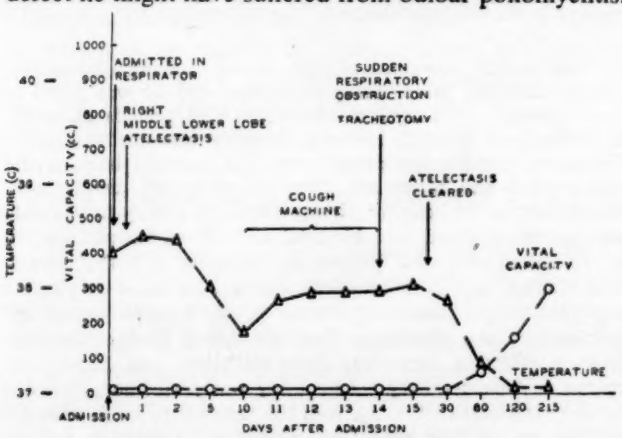

Fig. 4 (case 4).—Hospital course of patient M. C.

This type of patient can be managed more easily and certainly more safely if an airway is assured early and an easy means of removal of upper respiratory tract secretions is provided.

CASE 4 (fig. 4).—M. C., a 19-year-old boy, was transferred to the New York Hospital one week after his admission to another hospital, in which he had been placed in a respirator because of ventilatory failure. His illness had begun two weeks before the first hospitalization, with back pain, malaise, stiff neck, headache, and fever. On his first day of hospitalization he was found to have weakness of both arms and shoulders, and that evening shallow and rapid respirations were noted. He was placed in a respirator when ventilatory failure became severe and cyanosis was present. During the first week of respirator life, attempts to control upper respiratory tract secretions were made by means of hypodermic injections of atropine and suctioning from the pharynx. At the time of his transfer to the New York Hospital, the patient was found unable to breathe without the aid of the respirator and to have marked weakness of both arms and shoulders, moderate weakness of the lower extremities, and middle and lower lobe atelectasis on the right side. During his first two weeks in the New York Hospital, attempts were made to clear the atelectasis by positioning and by the use of the artificial cough machine, loaned by Dr. Alvan Barach. X-ray examinations throughout this period showed no resolution of the atelectasis. On the evening of the 14th hospital day, the patient suddenly became cyanotic and unresponsive. Suctioning and attempted bronchoscopy to clear his airway effected no improvement. An emergency tracheotomy was performed, followed by the removal of a moderate amount of mucopurulent material from the trachea. The patient's color improved immediately. He was unresponsive for 3 hours after tracheotomy and disoriented for another 12 hours after regaining consciousness. Five days later a chest roentgenogram showed complete clearing of the atelectasis. Since the tracheotomy was performed, this patient has had a gradual increase in his vital capacity from 0 to 350 cc. over the past nine months, and he now requires only the rocking bed at night for assistance in ventilation.

CASE 5.—J. W., an 18-year-old white boy, was admitted to another hospital with a three day history of stiff neck, backache, and general malaise. Physical examination revealed a temperature of 37.8 C (100 F) and no evidence of muscular weakness. Two days later, weakness of both legs, weakness of the left arm, and respiratory insufficiency developed. The patient was placed in a respirator. At the time of transfer to the New York Hospital, he was afebrile and showed marked weakness of all four extremities and the trunk muscles. Vital capacity on admission was 200 cc. The patient was placed on the rocking bed during the day and required the respirator only at night. One month later he no longer needed the respirator and required the rocking bed only at night for aid in ventilation. Four months later, after being free of all forms of artificial respiration for one month and with a vital capacity of 520 cc., he suddenly became cyanotic and unresponsive. He was found to have a large amount of clear mucus in the pharynx, which was removed, and he was placed in a respirator. He showed no improvement until his airway was cleared of secretions by bronchoscopy. Tracheotomy was immediately performed, and artificial respiration continued in the tank-type respirator. He was unresponsive and had frequent generalized tonic and clonic convulsive seizures during the next 24 hours. After regaining consciousness, he was disoriented for 72 hours. When his mental state cleared, he was "weaned" from the respirator, and 15 days after tracheotomy he no longer required artificial respiration; his vital capacity at this time was 600 cc. Since this episode, one year ago, of airway obstruction followed by tracheotomy, he has had no difficulty in removing secretions and has shown general improvement. His vital capacity is 1,000 cc., and he has begun to walk with assistance.

Comment.—The fourth and fifth protocols illustrate the hazards of prolonged respirator life. Sudden obstruction of the airway from laryngospasm or from secretions is a continuing grave danger facing any patient with a marginal ability to ventilate, regardless of whether artificial respiration is necessary. With a tracheotomy in place, a sudden accumulation of secretions, for whatever reason, can be easily removed, and the possible occurrence of atelectasis or hypoxia and hypercapnia is prevented. The danger of central nervous system damage from hypoxia during periods of obstruction of the airway in these patients is great enough so that, if prolonged respirator life seems probable, tracheotomy is clearly indicated before the patient is placed in the respirator.

COMMENT AND SUMMARY

The usual indication for tracheotomy in the past has been hypoxia or hypercapnia following evidence of ventilatory failure associated with airway obstruction from inability to raise secretions from the lower respiratory tract or following evidence of medullary paralysis associated with pooling of secretions in the pharynx, with obstruction of the upper respiratory tract. A prophylactic tracheotomy is designed to prevent the development of hypoxia or hypercapnia by assuring the patient an airway not only during the acute phase of his illness but in the weeks and perhaps months that follow when vital capacity is marginal. A marginal level of vital capacity

can be safely defined as about 25% of the expected normal capacity for any individual patient.[3]

The following indications have been found to be reliable in determining the time at which a prophylactic tracheotomy should be performed: 1. A tracheotomy should be performed in every patient with medullary paralysis who shows a decrease in vital capacity or irregularity in rate and depth of ventilation, with impairment of the ability to remove secretions from the respiratory tract. Respiratory irregularity and vital capacity can be measured easily by spirometric tracings, and these must be made at frequent enough intervals so that the amount and rate of changes are readily revealed. 2. A tracheotomy should be performed in every patient with evidence of severe and rapidly progressing paralysis, whose vital capacity is diminishing toward a marginal level, before artificial respiration is instituted.

525 E. 68th St. (21) (Dr. McDowell).

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CLINICAL STUDY OF SHOCK FOLLOWING MYOCARDIAL INFARCTION

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and
Sol Biloon, M.D., New York

The occurrence of the shock syndrome following acute myocardial infarction carries with it a high mortality rate.[1] Stead and Ebert [2] attributed the hypotension to cardiac failure, whereas Schwartz [3] and Levine [4] each treated a case successfully with antishock measures. Brofman and Hellerstein have recently reported with Caskey [5] the successful use of a new vasoconstrictor, phenyl tertiary butylamine sulfate, in such cases. Yet on reviewing physiological factors they state that venous return to the heart in this syndrome is more than adequate and such shock cannot be attributed to the mechanisms that are thought to be important in traumatic shock.[6] It is the purpose of this paper to report a study of 15 cases of the syndrome seen in 1949 and 1950, treated on the basis of clinical findings. It was expected that the response to such empirical therapy would serve to clarify the nature of this syndrome.

RATIONALE

This report is not intended to enter into all the theoretical considerations of the pathogenesis of shock. Fine reviews of this problem may be found elsewhere.[7] The two factors determining arterial blood pressure levels (B.P.) are cardiac output (C.O.) and the total peripheral resistance (T.P.R.) including blood volume. Their relationship may be expressed by the proportional formula: B.P. $\propto$ T.P.R. $\times$ C.O.[8] In shock following acute myocardial infarction, as in any other form of shock, hypotension is due to a fall in cardiac output, to diminished peripheral resistance, or to both. Recent work suggests that in shock of myocardial infarction the blood volume is not significantly diminished.[9] Therefore, the peripheral resistance is here considered a function of arteriolar tone.

In the course of this study, it was observed that the level of venous pressure of patients in shock following acute myocardial infarction varied considerably. According to Friedberg [10] the normal venous pressure levels range from 4 to 8 cm. of water. The majority of our patients were found to have venous pressure levels well above normal, while in the remainder the levels were in the lower limits of normal. As will be shown later, certain other features served to differentiate these two groups, e. g., pallor, profuse sweating, and the appearance of imminent death in the group with low venous pressure, and cyanosis and relative placidity in those with high venous pressures.

The clinical appearance of those cases with low venous pressure was strongly reminiscent of traumatic shock. Rapid and large plasma infusions,[11] and more recently intra-arterial transfusions,[12] have been used in otherwise unselected groups of cases of myocardial infarction in shock with varying results. Such sudden large increases in blood volumes of patients with hearts so recently damaged may initiate congestive heart failure. In view of this hazard, instead of increasing the total blood volume, it was decided to reduce the size of the vascular bed by means of phenylephrine (neo-synephrine®) hydrochloride. If shock in these cases were due to diminished peripheral resistance, a rise in arterial pressure would be expected to follow. Phenylephrine hydrochloride produces no tachycardia and no coronary artery constriction; its efficacy is not diminished by repeated administration and its action is of relatively short duration, thereby permitting its discontinuance in the event of untoward effect.[13]

The patients with high venous pressure resembled in many respects those with congestive heart failure. In an attempt to increase their cardiac output, rapid digitalization was achieved by the intravenous administration of lanatoside C.[14] If a deficient cardiac output were the cause of the hypotension, a rise in arterial pressure might be expected to follow such therapy. On the other hand a vasoconstrictor substance such as phenylephrine hydrochloride, whose action is almost exclusively peripheral, would not significantly increase arterial pressure levels in such cases.

METHODS AND MATERIAL

Oxygen and sedation (morphine or meperidine [demerol®] hydrochloride) were used as indicated. In one case a slow plasma infusion had been started prior to

From the Medical Service of the Morrisania City Hospital, New York.
Phenylephrine (neo-synephrine®) hydrochloride used in this study was supplied by Winthrop-Stearns Inc.
The bibliographic references have been omitted from THE JOURNAL because of lack of space; however, they are included in the authors' reprints.

our observation. Arterial blood pressure readings were made every two to five minutes during the course of this study, whenever not prevented by technical difficulties or clinical considerations. Venous pressure measurements were made ordinarily at less frequent intervals. For this purpose, an entry into a forearm vein was maintained by means of a slow infusion consisting of 5% dextrose in distilled water to which heparin had been added. A three way adaptor was incorporated at the intravenous needle hub. By attaching a capillary manometer at this point and filling it from the infusion reservoir, frequent venous pressure readings were readily obtained. The point of reference was the manubrium sterni. Whenever desired the manometer was detached for the introduction of intravenous medication. The infusion rate was regulated to about 15 to 20 drops per minute (about 60 ml. per hour). The total quantity of fluid administered thus was small and not considered to affect the readings significantly. The dose of phenylephrine hydrochloride varied from 0.5 mg. to 5 mg. The ordinary digitalizing dose of 1.6 mg. of lanatoside C was utilized.

The group of consecutive cases presented are fairly typical cases of acute myocardial infarction in shock seen in a city hospital. Although a considerable number of cases were studied and treated, only those showing unmistakable electrocardiographic evidence or postmortem proof of recent myocardial infarction are included in this report. It should be stated at this time that the therapy described was undertaken only when, with the usual expectant therapy, the patient's condition appeared hopeless.

REPORT OF CASES

CASE 1 (low venous pressure).—A 54-year-old white man was admitted with a one hour history of pain in the left arm starting when he pushed his stalled automobile. He drove to a nearby store where he lost consciousness. There was no past history suggestive of heart disease. On admission the patient was found to be pale, apprehensive, and sweating profusely. Respiration was sighing in character. The lung fields were clear and the heart sounds faint. The systolic pressure was 50 mm. of mercury and the venous pressure, 4 cm. of water. An electrocardiogram showed changes characteristic of acute posterior wall infarction. At the end of 55 minutes the patient's condition had deteriorated and spontaneous recovery was considered unlikely. With arterial pressure at 40/30 mm. Hg and venous pressure, 5 cm. of water, 0.5 mg. of phenylephrine hydrochloride was given intravenously. The arterial pressure rose to 60/48 mm. Hg and the venous pressure, to 16 cm. H_2O. The dose was increased to 1.5 mg., and in 5 minutes the arterial pressure reached 122/76 mm. Hg. On repeating this dose a maximal pressure of 154/78 mm. Hg was obtained. Subsequently the arterial pressure was maintained in the vicinity of 110/70 mm. Hg. Although the patient's general condition improved during the first day, the urinary output was only 300 ml. The next day he noted substernal pain and appeared cyanotic and critically ill. Rales were present at the right lung base. Orthopnea was not pronounced. The arterial pressure was 94/78 mm. Hg and venous pressure, 14 cm. of water. These levels did not significantly alter in the ensuing two and one-quarter hours. Accordingly, 1.6 mg. lanatoside C was given intravenously over a two minute period. One minute later the arterial pressure was 120/90 mm. Hg. Venous pressure fell gradually and 12 hours later was 7 cm. of water. Urinary output was normal in two days. Digitalis was continued in maintenance dosage until the patient left the hospital three weeks later. One month following discharge, electrocardiographic and fluoroscopic examinations showed no evidence of ventricular aneurysm.

CASE 2 (high venous pressure).—A 50-year-old white woman was admitted in semicoma. She had no past history of hypertension and had never taken digitalis. She had vomited and fallen to the ground a little while before admission. Although she could not at first be roused, there was no evidence of a central nervous lesion. No rales were heard over the lung bases. The pulse rate was 84, the blood pressure 72/56 mm. of mercury, and the venous pressure 16 cm. of water. An electrocardiogram taken immediately after admission revealed evidence of a recent anterior wall infarction. After half an hour's observation the arterial pressure had fallen to 68/44 mm. Hg and the venous pressure had risen to 20 cm. of water. At this time lanatoside C, 0.8 mg., was given intravenously. Within the ensuing 40 minutes the arterial pressure rose to 96/50 mm. Hg. The dose of lanatoside C was repeated at this point. During the next 18 minutes the arterial pressure rose further to 112/54 mm. Hg and subsequently continued to rise. The venous pressure fell at first to 15 cm. and eventually to as low as 9 cm. of water. The patient made an uneventful recovery. The arterial pressure on discharge was 120/70 mm. Hg.

RESULTS

Early in the course of this study, it became apparent that these 15 patients with acute myocardial infarction in shock were divisible into two groups on the basis of venous pressure and clinical findings. The first group, comprising five cases, exhibited venous pressures of 5 cm. of water or less and the clinical appearance of surgical shock with sweating, anxiety, and, except in one case, pallor. The second group, 10 cases, presented venous pressures of 12 cm. of water or over, apathy, and cyanosis; sweating in this second group was much less pronounced. Orthopnea was not commonly observed in either group.

Of the patients with low venous pressures treated with phenylephrine hydrochloride, all but one responded by a prompt rise in both arterial and venous pressures. The rise in arterial pressure varied from 34/20 mm. of mercury in one case to as high as 114/48 in another. The over-all average rise was 48/14 mm. Hg. The rise in venous pressure varied from 10 cm. of water in one case to 32 cm. in another. The average rise was 19 cm. of water. One patient had received plasma previously without deleterious effects. Only one person failed to show any response to the administration of phenylephrine hydrochloride. This patient also received plasma without benefit.

Except for one, those patients whose venous pressures were elevated were given lanatoside C intravenously. They responded invariably by a rapid rise in arterial pressure and some by a gradual fall in venous pressure. The rise in arterial pressure varied from 10/2 mm. of mercury in one case to 120/80 in another. The average rise was 52/10 mm. Hg. In one case the venous pressure fell by 11 cm. of water, but the average fall was only 3 cm. Phenylephrine hydrochloride was given to three of the patients with high venous pressures. In two patients the arterial pressure fell to unobtainable levels from initial readings of 80/0 and 54/0 mm. Hg. In the third case a rise of 66/50 mm. Hg was sustained for two minutes and then the arterial pressure fell to imperceptible levels despite repeated administration of phenylephrine hydrochloride and subsequently of plasma.

Two patients, originally belonging to the low venous pressure group, were given phenylephrine hydrochloride with a prompt rise in both arterial and venous pressures. Subsequently, however, the arterial pressures

dropped while the venous pressures remained elevated. Accordingly, lanatoside C was administered intravenously. In one case the arterial pressure rose by 26/12 mm. of mercury; in another the arterial pressure rose from imperceptible levels to 160/118 mm. Hg, probably a combined effect of the two drugs. The response to lanatoside C in these patients, therefore, was similar to that obtained in those with a high initial venous pressure.

In one patient originally belonging to the high venous pressure group, the administration of lanatoside C resulted in the usual rise in arterial pressure. By the next morning the arterial and venous pressures had fallen sharply. In view of this, phenylephrine hydrochloride was administered with a rapid ensuing rise in arterial pressure of 50/18 mm. of mercury and in venous pressure of 32 cm. of water. The response in this patient thus resembled that in patients with a low initial venous pressure.

COMMENT

The present study is an inquiry into some aspects of the problem of shock in myocardial infarction. It had long been assumed that when shock complicates myocardial infarction the already weakened heart is unable to withstand the increased burden of blood pressure raising measures.[15] This assumption has been repeatedly contradicted in fact.[16] In all of our patients usual therapy was abandoned because of a hopeless prognosis.

There is recent evidence that the blood volume in myocardial infarction shock is not significantly diminished.[9] If this be true, the mean arterial pressure is proportional to the resistance to flow imposed by the arteriolar tone and also to the volume of blood ejected into the arteries in unit time, i. e., the cardiac output.[8] It follows that in cases with low arterial pressure due to low vascular tone a vasoconstrictor substance would tend to restore normal arterial pressure levels. In those cases with low arterial pressure as a result of cardiac failure, a similar result would be achieved by the administration of cardiokinetic drugs. The dramatic response here obtained in cases with low venous pressure following administration of phenylephrine hydrochloride was, therefore, due to the diminution in size of the circulatory bed and hence, presumably, to an increased return of blood to the heart. Such cases appeared clinically similar to instances of surgical shock and appear to have responded in a manner similar to the cases of surgical shock treated with phenylephrine hydrochloride by Johnson.[17] The patients successfully treated by Brofman and co-workers [5] probably fall into this category. The current concept is that shock following acute myocardial infarction is due primarily to a fall in cardiac output.[18] If this were true in the foregoing instances, the rise in arterial pressure following use of vasoconstrictor agents would be difficult to explain.

The decided rise in arterial pressure subsequent to administration of lanatoside C to the patients with high venous pressure was presumably due to this drug's action in increasing cardiac output. Hence, these cases are considered to represent heart failure of a degree so profound that the cardiac output is insufficient to maintain adequate arterial pressure levels despite compensatory vasoconstriction.[9] It is quite possible that the existing peripheral resistance in these cases cannot be further increased by the use of vasoconstrictor agents. But even if this were possible, a significant rise in arterial pressure in the presence of such severe myocardial weakness could not be expected. Our experience with phenylephrine hydrochloride in such instances supports this contention. Thus, in shock accompanying myocardial infarction, cardiac failure is of primary importance in cases with high venous pressure, while in those with low venous pressure the main fault is in diminished peripheral resistance. Hence, phenylephrine hydrochloride was effective in the latter but not in the former.

It is interesting to speculate on the natural history of this syndrome. The sequential appearance, on occasion, of both high and low venous pressure states in the same patient suggests that these are two phases of one syndrome rather than two individual syndromes. It is our opinion that the initial shock following acute myocardial infarction is a peripheral response to the grave injury sustained by the heart. It appears clinically similar to shock resulting from injury to other major organs. The low venous pressure in such cases attests to a diminished venous return to the heart. Some of these patients die soon. Some recover spontaneously and rapidly so that the shock state, with its attendant weakness, sweating, and pallor, often becomes part of the clinical history. Thus, only a small proportion of patients in shock following acute myocardial infarction displays a low venous pressure on admission to the hospital. When prolonged, however, this situation may alter: pallor gives way to cyanosis, the venous pressure rises, and the heart fails so profoundly that the arterial pressure remains very low despite compensatory vasoconstriction. This sequence of events appears similar to that observed by Wiggers in experimental shock.[19]

One of the criteria for treatment in this series of cases was a hopeless prognosis. The mortality rate was very high. Of five patients in the low venous pressure group, only three recovered and one of these died one month later of a proved pulmonary embolus. Of the 10 patients in the high venous pressure group, only 2 recovered. It would be interesting to observe results in patients treated as soon as the shock syndrome is recognized, in either its low or high venous pressure phase.

SUMMARY AND CONCLUSIONS

Clinical observations on 15 patients with shock following acute myocardial infarction are described. Such patients may be divided into two groups: 1 Those with low venous pressure responded to use of phenylephrine (neo-synephrine®) hydrochloride by a rise in both venous and arterial pressures. Plasma produced similar results when used in conjunction with phenylephrine hydrochloride. It is felt that such patients represent cases of shock not unlike that seen following trauma. 2. Patients with high venous pressure responded to the administration of lanatoside C by a rise in arterial pressure and in some cases by a fall in venous pressure. The latter pressure invariably failed to drop spontaneously in this group. It is felt that these patients were in severe heart failure. The use of intravenous plasma, intra-arterial transfusion, or phenylephrine hydrochloride in the treatment of this syndrome in the presence of high venous pressure seems clearly contraindicated.

1882 Grand Concourse (Dr. Biloon).

PHILADELPHIA PLAN FOR PELVIC CANCER CONTROL

George A. Hahn, M.D., Philadelphia

Success in the treatment of pelvic cancer depends primarily on early diagnosis, since the results in the management of cases discovered in the early stages are much superior to the outcome in those discovered late. Early diagnosis is based on periodic health examinations, prompt seeking of advice by the patient when suggestive symptoms arise, and early recognition of the disease by the physician. The responsibility of the physician, of course, is to take a careful history and perform a thorough pelvic and rectal examination with an awareness of the possibility of cancer.

The Committee for the Study of Pelvic Cancer was organized in 1945 by the Obstetrical Society of Philadelphia with the sanction of the Philadelphia County Medical Society and the financial support of the Philadelphia Division of the American Cancer Society. The committee was formed to study the delay period in the diagnosis of female pelvic cancer. The committee used the Maternal Mortality Committee as a pattern for its work. It was thought that the best method of approach would be to have friendly meetings with family physicians to discuss the factors in the delay period in the diagnosis of pelvic cancer. It was believed that the general practitioner should be the center of the problem, since he is usually the first one seen by the patient and it is essential that the physician's actions be prompt and correct so that the patient's care be started at once.

At present the membership of the committee is composed of an advisory group, comprising the chiefs of the departments of obstetrics and gynecology of the various medical schools in the city, and an active group, with representation from various teaching and nonteaching hospitals in the city. Permission has been granted to the investigators to enter the wards and outpatient departments of 34 hospitals to interview all patients known to have pelvic cancer. A questionnaire designed for its brevity and clarity in the chronologic information about the delay period is used to help record the desired information. A delay is considered to exist on the physician's part if more than one month has elapsed between the patient's first visit to the physician and the establishment of the proper diagnosis. It is important to note that one of the investigators has a nursing education; both are adept in questioning and are diplomatic in their contacts with patients and physicians. The investigators have been very helpful in strengthening a desirable physician-patient relationship.

The committee has a monthly luncheon meeting at which time cases with an apparent physician delay are presented for discussion. Any physician intimately connected with a case is invited to the meeting. This is essential, since it would be unwise to ascribe delay to a physician without giving him an opportunity to present the facts as he knows them. It is likewise educational in that the physician is exposed to stimulating discussion in regard to pelvic cancer, emphasizing the importance of pelvic examinations and early diagnosis, thereby creating the all-important "cancer consciousness." The meetings are open to all interested physicians. Physicians who are concerned in the delay period of cases to be discussed are individually invited by letter and telephone. In addition to the committee members and the invited guests, gynecologists, interns, residents, and other interested physicians regularly attend the sessions. To date, from September, 1946, to April, 1952, 606 physicians have been invited to discuss cases and 197 physicians have actually participated in the discussion of patients with whom they have had contact. Some of the physicians involved come from distant communities, from which it would not be feasible for them to attend the meetings. In these instances the majority have courteously answered the letters of inquiry. Thus far, 179 cases have been discussed of a potential 352 cases scheduled. During the past year the average physician attendance has been 38. It is interesting to note that a good many physicians, originally invited because of intimate relationship to a case, continue to attend the luncheon meetings because of an aroused interest in the problems encountered in pelvic malignancy.

TABLE 1.—*Proportion of Patient, Physician, and Institution Delay in 2,765 Cases of Pelvic Cancer*

Delay Agent	No. of Patients	Percentage of Patients
Patient	1,071	38.7
Physician	428	15.5
Physician and patient	412	14.9
Institution	34	1.2
Institution and patient	39	1.4
None	781	28.3
Total	2,765	100.0

TABLE 2.—*Distribution of Pelvic Cancer According to Organ or Site, September, 1945, to April, 1952*

Organs or Site of Cancer	No. of Cases
Cervix	1,614
Fundus	637
Ovary	264
Cervical stump	87
Vulva	73
Vagina	39
Others	51
Total	2,765

The tone of the meetings must be courteous and friendly. It is a requisite that the chairman of the meeting appear tolerant and understanding; even when an obvious case of flagrant physician delay is disclosed, emphasis and importance should not be placed on this fact in itself. Rather, the underlying reason for the delay should be stressed. Was it failure to take a biopsy? If so, what type of biopsy should have been done? How should it have been taken? Would a Papanicolaou smear have been of aid? The group should not be critical of the physician,

Presented at the Cancer Symposium of the Medical Society of Milwaukee County, Milwaukee, April 10, 1952.

but rather it should attempt to understand his problem and give aid so that delay in the future may be avoided.

I would like to cite the case of one physician in Philadelphia who was a reluctant guest at one of the early meetings. It was a case of obvious physician delay, and it was apparent that the physician involved actually had no idea that he was at fault. Some time later the physician again was an invited guest. At the conclusion of the discussion the physician involved volunteered, "I believe this is a case of physician delay." This statement was made in a friendly fashion, without prompting. Since then he has been a frequent visitor at the meetings, not as a possible "delay participant."

RESULTS OF STUDY

Certain information has been accumulated during the course of the committee's existence. These data have been obtained by personal interview with the patient, review of the patient's records, and from the patient's physician himself. As of April 1, 1952, 2,765 cases have been investigated. The physician (or institution) was wholly to blame for delay in diagnosis in 462 cases, or 16.7%. The physician (or institution) contributed to a delayed diagnosis in 913 cases, or 33%. There was no delay in 781 instances, or 28.3%.

The committee also considered the distribution of cases by organs or sites. As would be expected, most of the cases were primary in the cervix with a lesser number in the fundus and ovary. Because there seemed to be a fairly large number of cases, a separate category, cervical stump cases, is listed in table 2.

The commission found that the highest percentage of cases where delay is attributed solely to the physician occurs in the cervical stump group, 24 cases (27%). The highest incidence of delay where the physician played a contributory role was again the cervical stump, 52 cases (60%). It would appear that the physician may be lulled into a sense of security when he realizes that he is dealing with a patient who has had a previous supravaginal hysterectomy. I believe that here again is a pertinent reason for performing complete hysterectomy whenever feasible, in preference to the supravaginal operation. The possibility that some of these cases may have had cervical carcinoma at the time the supravaginal hysterectomy was performed, or that the carcinoma may have been endocervical in origin, must also be considered.

Physician delay in regard to the ovary, fundus, and vulva was approximately the same, but when one takes into account the combined delay there was a greater amount (50%) in the vulva than in the ovary (40%) or fundus (38%). The protracted use of ointments and douches was a distinct contributing cause in this group of patients. There was a 67% combined patient delay in this type of patient. It is almost self-evident why there is a high percentage of physician delay (20%) and combined physician delay (40%) in the ovarian group, Ovarian carcinoma is characterized by its insidious onset and by its very poor prognosis, since so many ovarian cases do not come to proper treatment until in the very latest stages. It is encouraging to see the relatively low rate of physician delay (12%) (27.5% combined) in the cervical group. Yet this is the lesion where there is the greatest single patient delay (42%).

It was seen that in 1945 and 1946 there were 1 (4%) and 25 (9%) stage 1 cases, respectively, reported out of a total of 296 patients who were investigated. During this same period there were 13 cases (51%) and 107 cases (40%) in stage 3 and 8 cases (32%) and 47 cases (17%) in stage 4. During 1950 and 1951 there were 56 cases (26%) and 29 (23%) stage 1 cases, respectively, reported out of a total of 323 patients. During this same time the percentage of stage 3 cases had dropped to 28% (61 cases) and 20% (23 cases) and the percentage of stage 4 cases had fallen to 12% (25 cases) in 1950 and 7% (8 cases) in 1951. It would certainly appear that there has been a significant decrease in the number of advanced cases that are being seen and reported in the Philadelphia area and a definite increase in the number of early cases that are being investigated. It is gratifying to note the diminishing percentage of stage 4 patients.

TABLE 3.—*Proportion of Pelvic Cancer Cases in Relation to Site and Cause of Delay*

Delay Agent	Site of Cancer, %						
	Cervix	Cervical Stump	Fundus	Ovary	Vulva	Vagina	Others
Physician	12	27	19	20	19	2	21
Physician and patient	15	19	14	13	30	10	9
Institution	0.3	6	1	1	0	2	0
Institution and patient	0.3	2	2	2	0	2	0
Institution and physician	0	0	0.6	1	0	2	0
Institution, physician, and patient	0.1	3	0.1	0.4	1	0	0
Patient	42	21	36	30	35	38	30
None	29	18	26	29	13	41	35
Combined physician delay	27.5	60	38	40	50	20	33.3
Combined patient delay	57.3	47	53	46	67	51	39

The problem of in situ cases does not seem to be in the province of this paper, since there is so much controversy in the literature in regard to the proper diagnostic criteria for such a lesion. The cases thought to represent intraepithelial carcinoma of the cervix uteri are listed in the unclassified column, which includes stage 5 patients (treated elsewhere) and patients who were not clinically evaluated as to the extent of their disease.

The average duration of physician delay has not changed appreciably since the inception of the committee. The average delay in cases of carcinoma of the cervix was 7.4 months, of carcinoma of the fundus 13.7 months, of carcinoma of the ovary 9.6 months, and of carcinoma of the vulva 19 months. The delay in diagnosis due to failure to examine the patient has been fairly constant

throughout the years, averaging about 50% in all sites: carcinoma of the fundus 48.6%, of the cervix 51.1%, of the ovary 62.1%, and of the vulva 71.2%. In 73 cases delay in diagnosis or treatment occurred in the services of Philadelphia hospitals. In this group of cases one of the common causes for delay was the performance of inadequate surgery before carcinoma had been ruled out. In some instances the patient had been admitted to a medical or surgical service because of supposed medical or surgical difficulties and the proper gynecologic diagnosis was not made until obvious symptoms and findings directed attention toward the pelvic region. Aside from failure to do a pelvic examination, delay was sometimes due to oral or parenteral medication (usually hormonal), local treatment of the cervix, the false assumption that the bleeding was due to the menopause, or deferring the pelvic examination because of bleeding.

COMMENT

It is difficult to accurately evaluate the total effect that the Committee for the Study of Pelvic Cancer has had on the practice of medicine in the Philadelphia area. The luncheon meetings have become an important source for the interchange of ideas about pelvic malignancy. From the educational aspect, both specialists and practitioners alike benefit; the specialist gains a greater appreciation of the problems inherent in the general practice of medicine, and the practitioner is exposed in a most satisfying way to the knowledge and skill of the specialist. In addition to the free discussions that occur during the meeting, a stenotypist takes an accurate transcript of the happenings, and this is printed each month in the county medical bulletin. These transcripts are received and read regularly by members of the society throughout the city and its environs. Voluntarily many physicians have asked the committee to include their private and semiprivate patients in the survey of patients being investigated. This is becoming more and more common, and it is evident that the sympathetic conferences between the patient and the investigator are actually a help in the physician's management of the case.

TABLE 4.—*Number of Cases of Carcinoma of the Cervix by Stage of Disease, Sept., 1945, to July, 1951*

	Stage 1		Stage 2		Stage 3		Stage 4		Unclassified		Total
	No.	%	No.	%	No.	%	No.	%	No.	%	No.
1945	1	4	1	4	13	51	8	32	2	8	25
1946	25	9	73	27	107	40	47	17	19	6	271
1947	54	19	75	26	106	37	40	14	6	2	281
1948	45	17	65	24	86	34	49	18	20	7	265
1949	58	22	59	23	70	27	31	12	35	14	253
1950	56	26	43	20	61	28	25	12	27	14	212
1951	29	23	45	40	23	20	8	7	6	5	111
	268		361		466		208		115		1,418

As a result of the stimulus from the Committee for the Study of Pelvic Cancer, a Committee for the Study of Breast Cancer has been started in Philadelphia. This is a joint venture of the Obstetrical Society of Philadelphia, the Pathological Society of Philadelphia, the Philadelphia Roentgen Ray Society, the Philadelphia Academy of Surgery, and the Philadelphia County Medical Society with the financial backing of the Philadelphia Division of the American Cancer Society. This committee had its first monthly meeting in September, 1951, and at present has an average attendance of 20 to 25 persons at its meetings. From the experience thus far, it would appear that the methods developed by the pelvic cancer committee may be admirably used with reference to other organs of the body.

The approach to the problem, from the very first, has been a cooperative venture. The family physicians' problems have been emphasized, and by mutual discussion the specialist and the practitioner have gained insight and fundamental knowledge. I would like to read the closing paragraph from an unsolicited letter received by the committee from a general practitioner on March 19, 1952.

"I read your discussions regularly in *Philadelphia Medicine* and would like to state that your committee is doing a perfectly fine job in facing, and making others face, this situation of delay, fairly and squarely. By so doing you are keeping everyone on their toes in ferreting out pelvic pathology at an earlier date. Aside from this, you are helping general practitioners to keep abreast of the times."

SUMMARY

1. A description of the organization and aims of the Committee for the Study of Pelvic Cancer is given.

2. The attendance at the meetings is discussed.

3. Tables are presented demonstrating that the highest percentage of physician delay occurs in cases of carcinoma of the cervical stump and carcinoma of the vulva.

4. Since the beginning of the committee's activities there has been a notable decrease in the number of cases of advanced cervical cancers reported.

5. Since the beginning of the committee's activities there has been a notable increase in the number of early cases of cervical cancers reported.

6. The educational value of the Committee for the Study of Pelvic Cancer for specialist and general practitioner alike is stressed.

255 S. 17th St.

Tuberculosis.—What we call tuberculosis today was not always a precise definite entity. Such different terms as miliary tuberculosis, caseous bronchitis, phthisis, scrofula, bovine tuberculosis, and many others were recognized, with no universal agreement as to whether they were all manifestations of the same condition. . . . Before Koch, the identification of the disease or any of its forms was a matter of judgment and dispute. . . . Koch made his great advance by developing a totally new staining method and elaborating a different type of culture medium. With the help of these technical aids, he demonstrated and described a bacterium not hitherto known. With very careful work he studied a wide variety of tuberculous tissues from human lungs, brain, intestine, lymph nodes, and joints, as well as from cattle, pigs, fowl, monkey, guinea pig, and rabbit. In all, without exception, he was able to stain a characteristic bacterium of special properties. In all cases studied, then, this bacillus was found. . . . To prove the causative role of the bacillus "the bacilli had to be isolated from the body and cultivated in pure culture until devoid of all adherent products of disease originating from the animal organism; and, finally, through transfer of the isolated bacilli to animals, the same clinical picture of tuberculosis as is obtained empirically by the injection of naturally developed tuberculous material had to be produced."—L. S. King, M.D., Dr. Koch's Postulates, *Journal of the History of Medicine and Allied Sciences*, Vol. 7, No. 4, 1952.

USE OF ADJUVANTS IN STUDIES ON INFLUENZA IMMUNIZATION

3. DEGREE OF PERSISTENCE OF ANTIBODY IN HUMAN SUBJECTS TWO YEARS AFTER VACCINATION

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WITH THE COLLABORATION OF

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Studies dealing with the application to man of influenza virus vaccines emulsified in a mineral oil of low viscosity have been in progress for several years. The data derived in the course of these investigations have significance not only for the problem of influenza immunization but for others of a similar nature. A summary of new data is reported here because the experience with influenza virus vaccines emulsified in light mineral oil was an important factor in facilitating the extension in human subjects of studies with experimental poliomyelitis vaccines; a report of the latter appeared in THE JOURNAL March 28 (page 1081).

There are discussions in the earlier papers of this series [1] and in another recent report [2] of the problem involved in the development of a vaccine for influenza that would be effective against the immunologically different types as well as the different strains within each type. In these reports there also is discussed the problem involved in the development of a preparation that might provide a durable effect for a period, the full extent of which has not yet been determined. It appears that emulsification with light mineral oil may provide, in part at least, the means for resolving the problems of prolonging vaccine effectiveness and increasing the immunologic coverage to include a sufficient number of strains to cover the entire spectrum for each virus type. The historical background of the use of light mineral oil as an immunologic adjuvant has been reviewed by Freund [3] and in our earlier communications.[1] It is of interest, as Freund has pointed out, that paraffin oils were used as early as 1916 by Le Moignic and Pinoy.[4] Freund has also referred to the work reported in 1935 by Coulaud [5] and Saenz.[6] In 1937, Freund [7] reported his significant observations and Ramon, Lemetayer, and Richou [8] made known their findings in studies on a variety of adjuvants.

Since it is the purpose of the present communication to illustrate a principle that has been applied on a wide scale, but one that is not at present available for general application, the technical details concerned with the actual preparation of the vaccines employed will not be elaborated on here. This has been done, in part, in the earlier papers and will be discussed further in the reports to follow.

DEGREE OF PERSISTENCE OF ANTIBODY FOR TWO YEARS

It is now possible to report the results of studies on the titer of antibody at intervals up to two years after inoculation in medical students at the University of Pittsburgh who will be available for continued study over a period of several years at least. The students were divided into two groups: the first received a single injection of vaccine emulsified in light mineral oil; the other received an aqueous preparation containing the same quantity of virus per unit of inoculum.[1c] These vaccines contained viruses of types A, A′, and B, which were represented by PR8, FM1, and Lee strains, respectively. Each was present in a concentration of 100 CCA (chick cell [red agglutination] unit) units for each strain, or a total of 300 CCA units per 0.25 ml. of inoculum injected intramuscularly into the triceps. The total concentration of virus in the standard vaccine is 500 CCA units per 1 ml. dose.

Data on antibody response six weeks after vaccination in these subjects have been reported.[1c] In figure 1 are summarized the geometric mean antibody titers at six weeks, four months, nine months, one year, and two years after inoculation. It is obvious that the level of antibody is significantly higher in the group inoculated with the emulsified preparation. In this group, the maximal effect is evident four months after inoculation; it then declines slightly in the course of the subsequent interval up to one year, after which it appears that little if any change ensues in the second year. In the group inoculated with the aqueous preparation, the maximal effect is evident sometime before the sixth week, and the decline begins thereafter and up to one year, after

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Because of lack of space, some of the bibliographic references and all of the acknowledgments have been omitted from THE JOURNAL and will appear in the author's reprints.

These investigations were conducted under the auspices of the Commission on Influenza, Armed Forces Epidemiological Board, and supported by the Office of the Surgeon General, Department of the Army, Washington, D. C.

1. (*a*) Salk, J. E.; Laurent, A. M., and Bailey, M. L.: Direction of Research on Vaccination Against Influenza—New Studies with Immunologic Adjuvants, Am. J. Pub. Health **41**: 669, 1951. (*b*) Salk, J. E., and Laurent, A. M.: The Use of Adjuvants in Studies on Influenza Immunization: I. Measurements in Monkeys of the Dimensions of Antigenicity of Virus-Mineral Oil Emulsions, J. Exper. Med. **95**: 429, 1952. (*c*) Salk, J. E.; Bailey, M. L., and Laurent, A. M.: The Use of Adjuvants in Studies on Influenza Immunization: II. Increased Antibody Formation in Human Subjects Inoculated with Influenza Virus Vaccine in a Water-in-Oil Emulsion, Am. J. Hyg. **55**: 439, 1952.

2. Salk, J. E.: An Interpretation of the Significance of Influenza Virus Variation for the Development of an Effective Vaccine, Bull. New York Acad. Med. **28**: 748, 1952.

3. Freund, J.: The Effect of Paraffin Oil and Mycobacteria on Antibody Formation and Sensitization, Am. J. Clin. Path. **21**: 645, 1951.

7. Freund, J.; Casals, J., and Hosmer, E. P.: Sensitization and Antibody Formation after Injection of Tubercle Bacilli and Paraffin Oil, Proc. Soc. Exper. Biol. & Med. **37**: 509, 1937.

which the mean titer for the group is constant but at a level not greatly above that present before vaccination.

Similar data, summarized after the one-year blood samples had been tested, are expressed in another way in figure 2. Here are shown the cumulative distribution curves before and after vaccination, showing the percentage of persons with antibody titers at or above the different levels. This method of analysis has more significance from the practical viewpoint, since we are interested in knowing how many persons have antibody above a critical level. Although the numerical value for the critical level has not been established in terms that can be stated without some reservations for reasons concerned with the technical problem of measuring antibody, it is evident that after six weeks and after one year a much higher proportion of subjects inoculated with the emulsified vaccine have higher levels of antibody than do persons given the aqueous preparation.

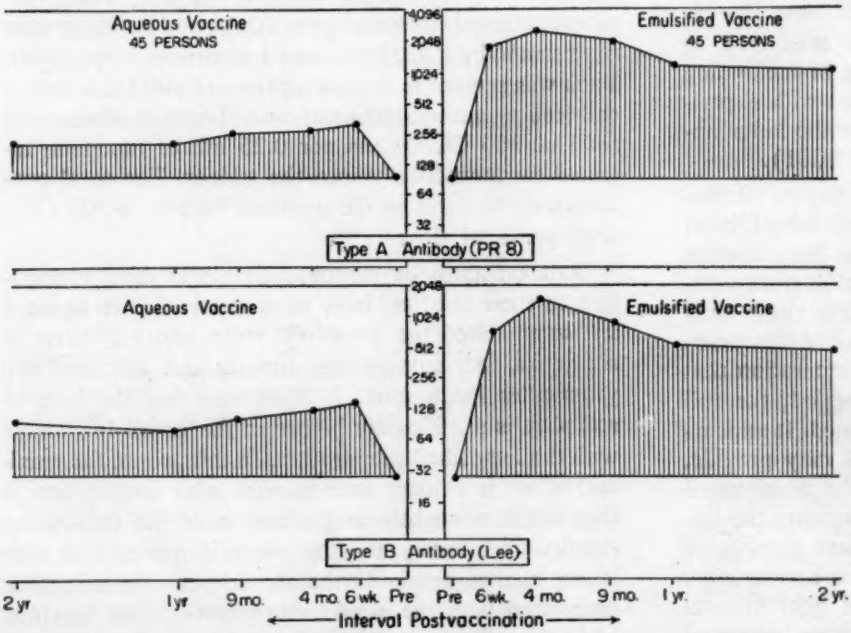

Fig. 1.—Geometric mean antibody titers at intervals up to two years after vaccination with influenza virus in aqueous or emulsified vaccines.

It is of further interest that whatever difference is observed between the six week and one year levels tended to occur in persons with the highest antibody titers, which are far beyond the minimum that appears to be needed for resistance to infection.[2] Little, if any, change occurred in the proportion of persons with titers at or above the lower levels that probably are closer to the region of the critical zone for effective immunity. When distribution curves, or scatter diagrams, of the data for the one and two year periods are compared, little difference is found at the lower levels. Whatever changes are observed occur in the upper range of the antibody scale. The difference between the emulsified vaccine and the aqueous vaccine in total effect induced is much more striking than is any change in the curve along the time scale following administration of the emulsified vaccine.

Attention should be called to the data for type B antibody in the group given the aqueous vaccine. In figure 1, the solid line indicates the observed difference between the first and second year, and the dash line indicates what would have been expected if an outbreak of influenza B in the community had not occurred in the interval between these two points. The assumption as to what would have occurred in the absence of the outbreak is justified by the data for type A antibody. It would seem that some persons had been infected with the type B virus under natural circumstances, accounting for the increase in titer in the interval in question. It is of interest that a similar change did not occur in the group given the emulsified influenza vaccine. Since no record was kept of the occurrence of illness in these groups, it is not possible to comment on the significance of the difference in the immunologic data for type B virus in the two groups. If infections had occurred in the group given the emulsified vaccine, any immunologic change might have been obscured by the high levels that prevailed. In any event, there is immunologic evidence that infection had occurred in the group given the aqueous vaccine. Whether or not infection was accompanied by symptoms of disease is not known.

TIME OF APPEARANCE OF ANTIBODY FOLLOWING INOCULATION

In view of the indication that the maximal response to the two kinds of vaccines occurred at different times, it was of interest to establish, in another experiment, the nature of the curve for antibody rise in groups inoculated with each. Table 1 shows for the Lee strain of type B virus the rate of appearance of antibody as measured at intervals of 2, 6, and 12 weeks following inoculation. It is clear that both preparations, in the dosages employed, tend to induce the formation of about the same amount of antibody within the first two weeks after inoculation but that the level continues to rise thereafter in the group given the emulsified vaccine. Thus, the aqueous material provided no advantage over the emulsified preparation in regard to more rapid appearance of antibody, at least in the dosages employed in this experiment; but the aqueous preparation seems to be antigenically active for a shorter period for reasons that have to do with the difference in the way the antigens in each preparation are handled and the way in which each induces antibody formation. The difference is due not merely to the retention of antigen for longer periods at the depot site but rather to the accumulation around the inoculum of cells important in antibody formation.[9] The light mineral oil and possibly, to some extent, the ingredients of the emulsifying agent attract these particular cells. It seems most probable that this effect is due to the oil and its chemical and physical characteristics, since vegetable oils do not have this property. It is not possible to simulate the adjuvant effect with oil-in-water emulsion [10] rather than the water-in-oil emulsions used in this study; only

in the latter instance, in which oil surrounds the vaccine in the emulsion particles, does the desired effect occur. This is undoubtedly due to the direct contact of the oil with the tissues eliciting the gathering of phagocytes that not only attempt to carry off the oil but are also effective in antibody formation. The result is that there develops at the site of inoculation the equivalent of an "antibody-forming tissue" or possibly an "antibody-forming organ," since the area contains a variety of cells, and the site eventually becomes vascularized. The principal characteristic of this "antibody-forming" area is that of connective tissue composed of a variety of cells.

ANTIBODY RESPONSE TO DIFFERENT QUANTITIES OF VIRUS

In view of the greater antibody response to virus emulsified with light mineral oil, it was of interest to determine the smallest amount of virus that, when mixed with oil, was still capable of inducing antibody formation in man. A series of studies was undertaken at Fort Dix, N. J., to evaluate the many quantitative factors involved in response to different doses. The details and the results of the numerous experiments are too extensive for presentation here. Nevertheless, a summary is shown in figure 3, which illustrates the kind of relationship observed between quantity of virus administered and antibody response in groups of about 50 young adults, each group being given different quantities of vaccine in an inoculum of constant volume. In some experiments the volume of the inoculum was varied, the quantity of virus being kept constant.

It is evident from the data in figure 3, expressed in terms of geometric mean-fold increase in antibody titer, that antibody response with the emulsified vaccines is much more effective than is the response to corresponding quantities of aqueous vaccines; for example, a similar degree of response was elicited by an aqueous vaccine containing 320 CCA units of virus as by an emulsified preparation containing 1 CCA unit. Moreover, as little as 0.1 CCA unit in an emulsion induced some measure of antibody formation, as compared with 32 CCA units of virus in the aqueous state; both doses in each system are at the margin at which antigenic activity is no longer evident.

The curve relating dosage to degree of response has two slopes, one in the region between 320 and 10 CCA units and the other in the lower range of virus concentration. This would suggest that there is little, if any, advantage in employing more than the quantity of virus necessary to achieve the maximal level; the latter seems to be determined by the volume of emulsion in which the virus is contained. The explanation for this probably is that the response is limited by the number of antibody-producing cells called forth by the adjuvant. Any excess of antigen beyond the quantity that can be handled in this way is relatively ineffective. When the quantity of virus is not in excess of the number of cells that can handle it, as is true with amounts below 10 CCA units per 0.25 ml. or 0.1 ml. dose, then the anticipated relationship between dose and antibody response is observed. In support of this explanation is the observation that a greater response occurred when 32 CCA units of virus was administered in a 0.5 ml. volume as compared with a 0.25 ml. volume and that an even greater response occurred following a 1 ml. dose. It is of interest that in the experiments employing both the 0.1 ml. and 0.25 ml. doses there seems to be little, if any, difference in the response to each when they contained the same quantity of virus. All of these experiences indicate that there are limits that can be helpful in guiding the practical application of vaccines emulsified in light mineral oil.

It is clear from these data that with emulsification of the vaccine in light mineral oil, much smaller quantities of virus are required than had heretofore been employed in aqueous vaccines. In fact, much greater antibody responses occur following inoculation of 10 or 32 CCA units of virus in the oil emulsion, which is

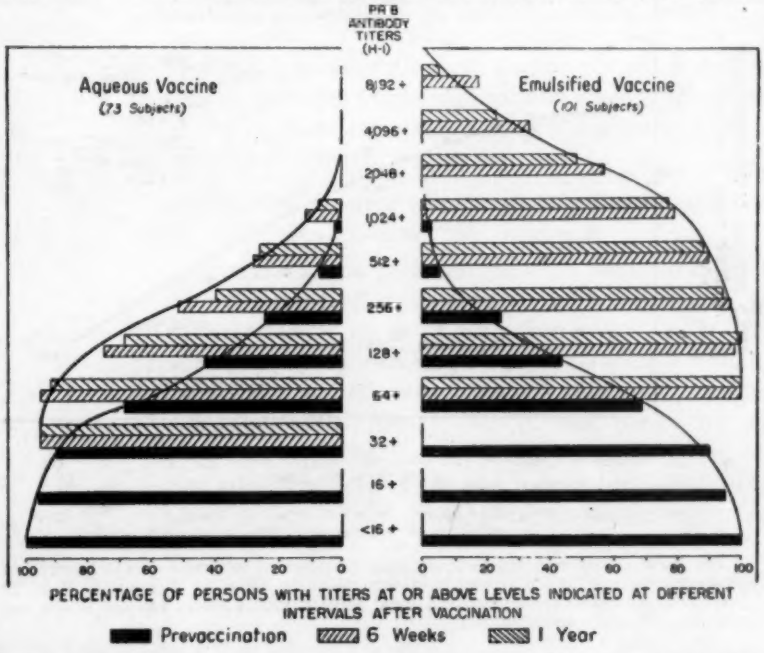

Fig. 2.—Comparison of antibody response and persistence in human subjects inoculated with aqueous or emulsified influenza virus vaccines.

equivalent to 0.02 to 0.06 ml. of an aqueous vaccine, than result from inoculation of 10 to 32 times this amount (0.6 ml.) without the mineral oil. From the practical viewpoint of availability for widespread application, i. e., cost and materials required, this consideration is of paramount importance. The question that arises in this connection is that of the persistence of the elevated titer of antibody following the use of the larger versus the smaller quantities of virus. Both tend to induce the formation of comparable levels of antibody within the broad limits on which the data reported in figure 3 are based. From figure 1 it appears that the rate of decline in antibody titer from the peak attained is relatively constant. The degree of persistence is influenced by the level attained shortly after vaccination; this is determined, in part, by the amount of antigen injected. The prolonged effect of the emulsified material is due to the continued action of the antigen for at least four months in inducing the high levels observed. There are no concrete indications, at present,

that whatever amount of antigen may still be active beyond the fourth month contributes significantly to the persistence. The observation that small quantities of virus are effective in inducing the formation of high levels of antibody is significant in that small doses would allow the incorporation of many strains in a vaccine, probably as many as may be required for inducing a uniform response to the total spectrum for each type.

DEGREE OF ANTIBODY RESPONSE TO STRAINS OF VIRUS NOT PRESENT IN THE VACCINE

It is now well established that influenza virus vaccines must induce adequate levels of antibody for all strains if the vaccines are to be effective in the practical prevention of disease. Although the importance of strain differences in this regard is now well established, it is necessary to point out that the great differences found among strains through serologic tests with animal serums [11] are not evident in similar investigations carried out in human subjects in the young adult age group. The evidence for this has been obtained over the past several years but has not yet been published. The data presented in table 2 show antibody response to the Lee strain (type B) and the Warner strain (regarded by some [11] as a type B′ virus) in subjects inoculated with a vaccine in which Lee was the only strain representing type B. It will be evident that, in terms of geometric mean antibody titers, the human subject responded equally well with antibody for both strains. The heightened effect induced by the emulsified preparation was induced equally for both strains. Serums from these subjects are being used to study various type B strains that seem, from tests with animal serums, to be different from one another. This is being done to establish whether this difference is significant when tested with serum from young adults vaccinated with emulsified vaccines containing one or a combination of strains.

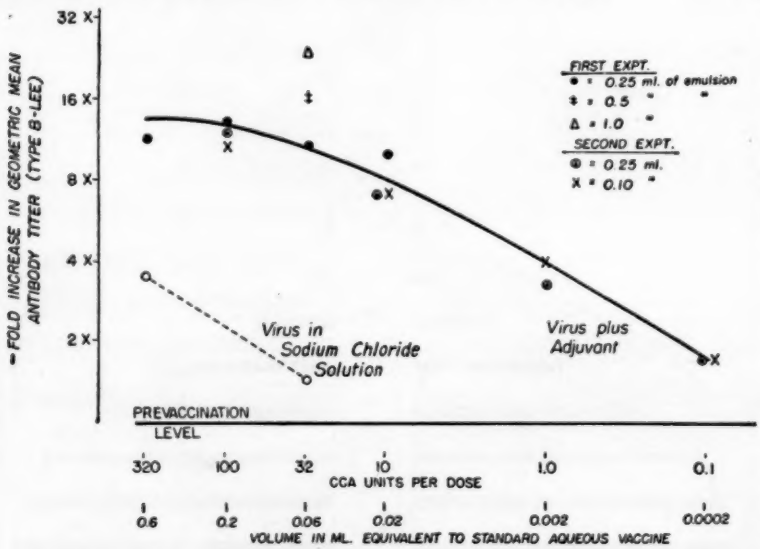
32 X
16 X
8 X
4 X
2 X
FOLD INCREASE IN GEOMETRIC MEAN ANTIBODY TITER (TYPE B-LEE)
FIRST EXPT.
● = 0.25 ml. of emulsion
‡ = 0.5 "
Δ = 1.0 "
SECOND EXPT.
⊕ = 0.25 ml.
X = 0.10 "
Virus in Sodium Chloride Solution
Virus plus Adjuvant
PREVACCINATION LEVEL
320 100 32 10 1.0 0.1
CCA UNITS PER DOSE
0.6 0.2 0.06 0.02 0.002 0.0002
VOLUME IN ML. EQUIVALENT TO STANDARD AQUEOUS VACCINE

Fig. 3.—Antibody response to diminishing quantities of influenza virus in aqueous or emulsified vaccines. (Each symbol represents the mean value for a group of about 50 young adults.) Each vaccine contained equal parts of PR8, Cuppett, and Lee strains and was diluted before emulsification.

Similar data for one type A strain (PR8) and three different strains of type A′ virus (FM1, Cuppett, and 283) are shown in table 3. Titers of antibody for three strains present in the vaccine and one strain (283—F.D. 1951) not present in the vaccine are compared. It is evident that the antibody response to the aqueous preparation containing the A′ component (Cuppett) was feeble, a behavior that appears to be characteristic of some of the A′ viruses.[12] This is attributed, for the moment, to differences in antigenic capacity among strains, but it is possible that it is due to such factors as (1) overtreatment with formaldehyde, (2) the possibility that little or no antibody to these strains is present before vaccination, and (3) the possibility that a second dose might provide a booster effect, even though it has had but minimal effect when observations were made in young adults revaccinated with the PR8 and Lee strains of types A and B, respectively.[13] One difference between PR8 and Lee strains, and the more recently prevalent A′ viruses is in the number of subjects that possess some antibody when tested before vaccination. This will be illustrated and discussed again later.

Nevertheless, it is clear that although little response occurred following inoculation with the aqueous material, substantial antibody responses in the groups inoculated with the vaccine emulsified in oil were evident for all three A′ strains, even though they were known to be demonstrably different when tests with animal serums were made. The A′ antibody response to the aqueous vaccine is too small to indicate whether significant differences between strains are demonstrable in the human subjects. It is possible that the effect with the emulsified preparation may be too great, in terms of hyperimmunization, and thereby would obscure strain difference. On the other hand, it might be expected that significant differences would be exaggerated. The data observed are recorded in the tables. Additional information that bears on this question is contained in the table referred to and discussed in the next section.

DIFFERENCES IN NUMERICAL VALUE FOR ANTIBODY MEASURED BY DIFFERENT STRAINS

The statement was made above that the numerical value for the critical level of antibody necessary for resistance could not be stated because of technical factors involved in the performance of the serologic test. Until the factors involved are better understood and corrections can be made, if necessary, in studies of this kind, it is possible merely to compare relative levels in groups inoculated with vaccines either emulsified or in the aqueous state. Table 4 illustrates this point. These data are derived from studies on vaccines used at Fort Dix, N. J., where a field trial of the emulsified vaccine was carried out for the first time in the winter of 1951-1952. In this table are contained figures showing the

11. Hilleman, M. R.: System for Measuring and Designating Antigenic Components of Influenza Viruses with Analyses of Recently Isolated Strains, Proc. Soc. Exper. Biol. & Med. 78: 208, 1951.

12. Salk, J. E.; Laurent, A. M., and McGinnis, R. C.: Differences in Antigenic Capacity Among Influenza Virus Strains, Federation Proc. 8: 410, 1949.

13. (a) Francis, T., Jr.; Salk, J. E.; Pearson, H. E., and Brown, P. N.: Protective Effect of Vaccination Against Induced Influenza A, J. Clin. Investigation 24: 536, 1945.

percentage of persons with antibody titers at or above the levels indicated, both before and 12 weeks after vaccination. That differences exist in the distribution of antibody titers before vaccination for the four strains of virus used in the serologic test is clearly evident. It is also clear that the degree of change in antibody titer was comparable for the three strains present in the vaccine, in that the level at which the solid line is drawn shows essentially the same relationships for the percentage of subjects with titers at or above these different levels before and after vaccination with the aqueous or the emulsified preparations. The reason for the two-fold difference in the arbitrary level between antibody for PR8 and Lee strains and the eight-fold difference between the antibody level for PR8 and Cuppett is open to speculation. Nevertheless, it is observations of this kind that make the determination of a critical level for immunity difficult to establish, at least

TABLE 1.—*Antibody Development After Inoculation of 1 Ml. of Vaccine Containing 250 CCA Units of Lee Virus (Type B) in Aqueous or Emulsified Preparations*

Antibody Titer (Lee)	Pre-vaccination (68) *	Aqueous Vaccine			Emulsified Vaccine		
		2 Wk. (34)	6 Wk. (34)	12 Wk. (33)	2 Wk. (34)	6 Wk. (30)	12 Wk. (32)
<16+	100 †	..	..	..	..	..	..
16+	68	..	..	100	100	..	..
32+	43	..	100	97	97	..	..
64+	19	100	94	97	91	..	..
128+	10	93	84	75	82	..	..
256+	4	67	58	56	65	100	..
512+	3	47	42	34	44	94	..
1,024+	2	32	32	31	13	91	100
2,048+	0	20	26	19	9	76	94
4,096+	..	12	10	7	3	53	79
8,192+	..	9	6	6	0	32	64
Geometric mean	23	441	410	333	563	3,072	5,734

* Figures in parentheses indicate total number of persons in each group.

† Figures given indicate percentage of persons with titers at or above the levels indicated at different intervals through 12 weeks after vaccination.

with the hemagglutination-inhibition test. It is for this reason that considerable attention is being devoted, at present, to determining whether the differences in postvaccination antibody titers shown in table 3 are of practical significance in terms of immunity to disease. This is being studied both experimentally and in the field, and further efforts are being made to determine whether the differences are due to the influence of the prevaccination status and may be accounted for as representing primary responses in some instances and secondary responses in others.

The only other point of interest is in the comparison of the antibody data for the two A′ strains, of which one (Cuppett) was contained in the vaccine and the other (strain 283) was not. It appears that the proportion of subjects whose antibody titers were raised above the level indicated by the arbitrary dividing line is less when the data are analyzed for antibody response to the strain not present in the vaccine (283). Whether this difference is due to technical factors involved in the serologic test or to qualitative differences in antigenic composition of the two strains is not clear. It is possible that the Cuppett strain is devoid of a particular antigenic component that is present in strain 283 and that this is responsible for the differences observed between the antibody responses to these two strains, as illustrated in tables 3 and 4. These questions require considerably more study; however, from the viewpoint of the present

TABLE 2.—*Antibody Response to a Strain of Type B Virus (Warner) Related to But Not Identical with Type B Strain (Lee) Present in the Vaccine**

Antigen Used in Serologic Test	Type of Vaccine †	Pre-vaccination Titers	Geometric Mean Antibody Titers at Postvaccination Intervals		
			2 Wk.	6 Wk.	12 Wk.
Lee (1940)	Aqueous	17	261	284	229
	Adjuvant	21	85	1,024	1,454
Warner (1948)	Aqueous	25	361	320	263
	Adjuvant	26	216	1,187	1,546

* There were 44 subjects vaccinated with the adjuvant vaccine and 27 vaccinated with the aqueous vaccine.

† The inoculum contained equal quantities of Lee, PR8, and FM1 strains in a concentration of 300 CCA units per 0.25 ml.

problem, it is clearly evident that preparations that appear to be rather feeble antigenically when administered in the aqueous state are rendered distinctly active if emulsified with light mineral oil.

COMPARISON OF ANTIGENIC CAPACITY OF TWO DIFFERENT LINES OF THE PR8 STRAIN

Several vaccine preparations were found to differ in their antigenic effect in a way that could not be accounted for in terms of virus concentration, at least as measured by red blood cell agglutinating activity. Therefore, a study was made of vaccines containing two different laboratory lines of the viruses that appeared to differ in this respect. Unfortunately, the precise history of each of the two preparations of the PR8 strain is not known, although cross-immunologic tests

TABLE 3.—*Antibody Response to Strain 283 of Type A′ Virus in Subjects Vaccinated with PR8, FM1, and Cuppett Strains**

Antigen Used in Serologic Test	Type of Vaccine †	Pre-vaccination Titers	Geometric Mean Antibody Titers at Postvaccination Intervals		
			2 Wk.	6 Wk.	12 Wk.
PR 8 (1934)	Aqueous	42	333	243	218
	Adjuvant	58	256	1,843	3,277
FM 1 (1947)	Aqueous	38	109	122	102
	Adjuvant	26	166	1,536	1,843
Cuppett (1950)	Aqueous	16	27	32	26
	Adjuvant	16	48	870	1,331
Strain 283 (1951 F.D.)	Aqueous	16	27	27	22
	Adjuvant	16	42	384	480

* There were 36 subjects given the adjuvant vaccine and 36 given the aqueous vaccine.

† The inoculum contained equal quantities of PR8, FM1, and Cuppett strains in a concentration of 125 CCA units per 0.5 ml.

indicate their identity. Vaccines were prepared from each, containing known quantities of virus, as measured by hemagglutinating activity. This experiment had an additional purpose, which was to determine the degree of antibody response to one-tenth the quantity of virus administered in the form of a 1:10 dilution of the usual emulsion of light mineral oil. It is readily evident from the data in table 5 that a much greater response was induced by vaccines O and P, containing one line of

the PR8 strain, than was induced by vaccines T and U, containing the other line of the same strain. It is of interest to note the relatively slight effect of the ten-fold reduction in quantity of virus and of emulsion on the geometric mean titer. These observations, with respect to apparent differences in antigenic capacity of the two different lines, are paralleled by the results of similar studies in experimental animals. In the animal test the antigenic extinction titer of the two preparations was found to be essentially the same, but the slopes of the lines expressing antibody response in relation to dose were different. It is clear that the emulsion will be only as effective as the antigen that it contains. The importance of these observations for the practical problem of selecting virus strains for inclusion in a vaccine is evident.

In further studies on the serums from these subjects, it has been observed that persons vaccinated with preparations O and P possess antibody in equally high titer for a wide variety of type A strains that are somewhat different antigenically from PR8, whereas this was not as true for the subjects with lower levels of antibody in the groups inoculated with preparations T and U. Thus, the problem of vaccine sufficiency in covering the antigenic spectrum can be helped in part by the selection of strains with good antigenic capacity as well as by the inclusion of a sufficient variety of strains to provide the necessary elements for the potentiating effect of the light mineral oil adjuvant. That there is wide latitude for increasing the number of strains is evident from the data presented earlier indicating that relatively small quantities of each strain are required for a substantial antigenic effect. Nevertheless, the advantages of strain selection in terms of antigenic potency as well as antigenic composition is clear.

COMMENT

The data reported, bearing on the problems of (1) strain formula, (2) virus dose, (3) volume of emulsion, (4) its degree of dispersion, and (5) the nature of the adjuvant constituents, are but a small part of the total experience being gathered in studies in human subjects of emulsified influenza virus vaccines. When all of the experiments have been completed and the data analyzed, it will be possible to specify rather precisely the conditions required for inducing the effect most likely to provide a preparation that will evoke a sufficiently high level of antibody in the greatest proportion of inoculated persons, and for maintaining antibody titers above the critical level required for immunity. Since the orientation in these studies has been to provide a vaccine that might be effective following a single inoculation, there is as yet but limited experience with respect to the question of the effect of reinoculation at different intervals after the first dose. This problem is, however, under investigation at present.

As is well known, one of the difficulties that had to be overcome in the use of emulsified vaccines is the one encountered by the Henles,[14] who observed abscesses in 2 of 80 subjects inoculated with the emulsified influenza virus vaccines they employed; in the remainder of the 80 subjects, persistent nodules were palpable subcutaneously at the inoculation site. Different investigators (cited by Loveless [15]) have had varying results when employing various antigens with the emulsifying agent "falba" and the oil used by the Henles. In the present studies, a different fluid petrolatum was used, the emulsifying agent was different, and the inoculum was deposited intramuscularly rather than subcutaneously. Muscular action may be of importance in facilitating dispersion of the inoculum and may reduce, thereby, the opportunity for "walling-off" or nodule formation. Other important considerations are character of the oil and the purity of the emulsifying agent. According to Freund,[16] the light mineral oil that he has recommended is of such low viscosity that paraffinomas do not occur, although oils of greater viscosity are likely to produce

TABLE 4.—*Antibody Response to Vaccines Used in Field Study at Fort Dix, N. J., 1951-1952* *

	PR 8 (Type A)			Lee (Type B)			Cuppett (Type A') (1950)			Strain 283 (Type A') (F.D. 1951)		
	Pre-vaccination Titers	Postvaccination Titers		Pre-vaccination Titers	Postvaccination Titers		Pre-vaccination Titers	Postvaccination Titers		Pre-vaccination Titers	Postvaccination Titers	
Antibody Titers		Aqueous Vaccine	Emulsified Vaccine		Aqueous Vaccine	Emulsified Vaccine		Aqueous Vaccine	Emulsified Vaccine		Aqueous Vaccine	Emulsified Vaccine
No. of subjects	(198)	(97)	(101)	(143)	(44)	(99)	(198)	(97)	(101)	(198)	(97)	(101)
<16+	100 †	..	..	100	..	..	100	100	100	100	100	100
16+	85	..	..	60	100	..	40	82	99	18	51	95
32+	71	100	..	22	93	100	8	39	97	3	20	75
64+	50	98	..	11	75	99	2	26	91	1	14	64
128+	26	77	100	4	55	96	1	10	80	0	8	41
256+	7	52	97	1	29	88	0	4	60	..	2	27
512+	4	29	89	0	18	70	..	2	42	..	2	11
1,024+	1	10	80	..	9	41	..	1	22	..	1	4
2,048+	1	4	56	..	9	15	..	1	7	..	0	0
4,096+	0	0	20	..	0	6	..	0	0	..	..	..
8,192+	..	..	7	..	..	0	..	..	..	..	..	..

* Each vaccine contained equal proportions of PR 8, Cuppett, and Lee strains in a final concentration of 500 CCA units per dose. The aqueous vaccine was given in a 1 ml. inoculum and the emulsified vaccine in 0.25 ml.
† Figures indicate percentage of persons with titers at or above the levels indicated before and 12 weeks after vaccination.

14. Henle, W., and Henle, G.: Effect of Adjuvants on Vaccination of Human Beings Against Influenza, Proc. Soc. Exper. Biol. & Med. **59**: 179, 1945.
15. Loveless, M. H.: Application of Immunologic Principles to the Management of Hay Fever, Including a Preliminary Report on the Use of Freund's Adjuvant, Am. J. M. Sc. **214**: 559, 1947.
16. Freund, J.: Personal communication to the author.

such effects. We have found that cyst-like reactions at the site of inoculation can occur but that when they do it is the result of an impurity in the emulsifying agent. Impure batches of the emulsifying agent, "arlacel A" (main ingredient, mannide mono-oleate), when injected into experimental animals, induce destructive tissue changes, and different commercial batches contain varying amounts of these undesirable constituents. When such impurities are removed from the emulsifying agent, it can be shown that it is non-reaction-producing both in laboratory animals and in man.

The details of the studies on the use of purified preparations of the emulsifying agent will be elaborated on elsewhere. It is sufficient to say at this time that more than 20,000 persons have been inoculated thus far in various studies with emulsified influenza virus vaccines. At no time have any systemic reactions been observed. No undesirable reactions were observed at the inoculation site in the first 2,000, but in the next group of 6,000, cyst-like reactions occurred in less than 1% of those inoculated with one particular lot of vaccine. It was this experience that led to an intensive study of the factors that might be responsible. It was found that such reactions could be reproduced in the laboratory animals inoculated with the material in question and that a test could be devised for measuring quantitatively the degree of this effect. Preparations were soon made available to us that were free of these undesirable constituents, even though they still retained their capacity to act as an emulsifying agent and to enhance antibody formation. Vaccines have been made with preparations of purified "arlacel A" and have now been administered to more than 12,000 persons, without evidence of untoward local reaction.

In discussing the practical implications of these investigations, the question of a carcinogenic effect of the light mineral oil invariably arises. The reason for this is due, in part, to the occurrence of paraffinomas when the more viscous paraffin oils were used for one purpose or another in years past. It has been pointed out that paraffinomas or oleomas are not likely to occur when an oil of low viscosity is used. Another question that has been expressed is related to the fact that certain known carcinogenic agents are derived from crude coal tar and that light mineral oil is also obtained from a similar source; however, it has been shown that the oils employed in these studies are free of any of the chemical or physical characteristics known to be associated with agents that are carcinogenic.

Another question brought forth concerns the development of sensitivity to egg material because of the presence of impurities in vaccines containing virus grown in the developing chick embryo. In the total experience thus far there has been no clinically recognizable problem of this nature. Serum samples from persons given different doses of vaccine are, however, being tested for complement-fixing activity to normal allantoic fluid, and studies are being made in vaccinated persons of dermal reactivity to the aqueous component of the vaccine. The evidence gathered to date suggests that sensitization will not be a problem in the application of emulsified vaccines in man. It should be pointed out that Freund was able to induce sensitization in animals with material emulsified in light mineral oil only if he included killed tubercle bacilli in the mixture but that sensitization did not occur if the bacilli were left out. It might follow, therefore, that since acid-fast bacilli are not present in the emulsions used in man, sensitization to the antigens incorporated in the vaccine probably will not occur. More than two and one-half years have elapsed since the first 200 persons were inoculated, and in these there have been no ill effects attributable to the inoculation.

SUMMARY

As a follow-up and an extension of studies on the use in man of influenza virus vaccines emulsified in a mineral oil of low viscosity, data are reported on (1) the level of antibody at intervals up to two years after vaccination, (2) the degree of antibody response to diminishing doses of virus, and (3) the indications of broader antigenic coverage to include strains related but not identical to those in the vaccine. These and other considerations that pertain to the development of an emulsified vaccine of broad immunologic coverage and of long duration are discussed.

TABLE 5.—*Comparison of Antibody Response to Two Different Lines of the PR8 Strain*

Laboratory Line	Designation of Experimental Vaccine	Virus Concentration per 0.25 Ml.*	Composition	Geometric Mean-Fold Increase in Antibody Titer†
1	O	60	10 parts virus suspension 9 parts oil 1 part emulsifying agent	82×
	P	6	1 part vaccine O 9 parts oil	58×
2	T	20	Similar to O	16×
	U	2	Similar to P	11×

* Figures in this column indicate CCA units per dose.
† Measured by hemagglutination-inhibition test using serial two-fold dilutions of serum and four hemagglutinating units of virus. The mean prevaccination level was about 40, expressed as the initial dilution of serum before the addition of the virus and red blood cell suspension.

Perforation of Esophagus.—Endoscopic removal of sharp bone spicules at the cricopharyngeal level may bring about pin point mediastinal penetrations because of pressure of the tip of the esophagoscope before the particles are removed. Such "stab" wounds of the mediastinum may be treated symptomatically with relative safety providing progressive clinical improvement is observed.

Prolonged operative time consumed in endoscopic procedures involving the lower esophagus may cause tears in the cervical area because of pressure of the body of the instrument over the prominent cervical vertebrae. These linear tears of the cervical esophagus should be repaired surgically as soon as the diagnosis is made. Lower esophageal perforations due to instrumentation should be treated by thoracotomy and primary closure unless extreme debility or sclerosing luminar lesions make the surgical approach impractical.

Postemetic or so-called spontaneous rupture of the esophagus while a relatively rare lesion, can be diagnosed both by clinical and radiological signs, and early thoracotomy with primary esophagus closure is the most effective treatment. A non-irritating contrast medium should be used for esophageal x-ray visualization when perforation is suspected.—D. J. Dugan, M.D., The Management of Esophageal Perforation, *Diseases of the Chest*, November, 1952.

MÖNCKEBERG'S ARTERIOSCLEROSIS

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Mönckeberg's arteriosclerosis is a clinically benign form of calcification of the blood vessels. Needless anxiety results from failure to differentiate this condition from intimal arteriosclerosis. Intimal arteriosclerosis often goes on to progressive occlusion of the blood vessels and carries an unfavorable prognosis. In Mönckeberg's arteriosclerosis, thrombosis of the blood vessels in the extremities does not occur, and in patients who have been observed for many years there has been no tendency to develop impaired circulation. The favorable prognosis in Mönckeberg's arteriosclerosis has been pointed out by Moschcowitz.[1] The clinical characteristics that distinguish Mönckeberg's arteriosclerosis from other forms are extreme calcification of the arteries of the lower extremities in young and middle-aged persons who have no symptoms or signs of impaired circulation. Calcification of the blood vessels is usually discovered by accident when a roentgenogram is made for arthritis, fracture, or some other bone or joint condition. There are no complaints of coldness or pain in the legs or difficulty in walking. All pulsations are easily felt in both feet and are normal in size. Oscillometric and temperature studies indicate a normal blood flow.

In our experience, the disease is infrequent. Only 53 cases were seen during the same period that over 3,500 cases of arteriosclerosis obliterans were observed by one of us (S. S.) in private practice. Sixteen of these had medial calcification associated with other nonvascular systemic diseases. At the same time a number of older patients with Mönckeberg's arteriosclerosis associated with obliterating arteriosclerosis was observed. One cannot be certain as to the exact incidence of Mönckeberg's arteriosclerosis in the general population from the number of cases observed by the peripheral vascular specialist. It is likely that many cases of uncomplicated Mönckeberg's arteriosclerosis escape detection because of the absence of symptoms, and because there is no occasion for x-ray examination of the legs, which is necessary to establish a diagnosis. Fifty-three cases of Mönckeberg's arteriosclerosis are reported. Fifty-two were men, and one was a woman. They may be divided into three groups: (*a*) those with uncomplicated Mönckeberg's arteriosclerosis, 30 cases (table 1); (*b*) those with Mönckeberg's arteriosclerosis associated with other systemic diseases, 17 cases (table 2); and (*c*) those with Mönckeberg's arteriosclerosis associated with occlusive arterial disease, 6 cases. In four of these the coronary arteries and in one the peripheral, coronary, and cerebral arteries were involved (table 3).

The majority of the patients were observed in the private practice of one of us (S. S.), several over a period of 10 to 15 years. Most of them were personally followed at intervals of a few years, but some were seen only once in consultation and their condition at a later date was reported through the courtesy of the referring physician. About 50% of the cases have been followed for more than five years. The condition of the peripheral circulation was ascertained by the palpation of pulses and oscillometric readings. Blood pressure and urine examinations were done in all cases.

The technique of x-ray examination was as follows: Using 14 by 17 in. nonscreen films in cardboard folders and a Bucky diaphragm technique of 200 ma.-sec. (100 ma. for two seconds), six views are taken: (1) both feet on the table side by side and turned in to demonstrate intermetatarsal artery calcifications, (2) patient squatting on the table, heels and toes together and knees far apart for lateral views of calcifications in the vessels in front and behind the ankles, (3) patient lying face down, legs separated somewhat, with feet pidgeontoed in as much as possible with one foot crossing the other like an X, for opening the interosseous spaces of both legs at once, (4) a conventional view, axiopulpal or pulpoaxial, taken of both thighs together, and (5 and 6) conventional lateral views taken of the left and right thighs, including the popliteal regions. The peak voltage used is as follows: feet (dorsal view) 37-42, feet (lateral view) 40-45, legs 47-52, thighs (axiopulpal or pulpoaxial) 57-62, and thighs (lateral) 54-59. If nonscreen film is not available, screen film may be used, but the film is still used in the cardboard holders. With such films the peak voltage must be increased 10 to 15 kvp. for all exposures. The clinical features of the disease are summarized in tables 1 to 3. Five brief histories are presented as representative of the entire group.

REPORT OF CASES

CASE 1.—A physician, aged 27, was seen in August, 1937, with an ulcer of the inner side of the right ankle, following a poison ivy rash involving the right leg. He had no symptoms suggesting arterial disease. X-ray examination of the legs showed extensive calcification of the blood vessels. His urinalysis had been repeatedly negative for sugar. The examination showed a situs inversus of the chest organs and the whole gastrointestinal tract. All peripheral arteries were normally patent in all extremities. They were soft on palpation. Oscillometric readings were normal. There was a punched-out ulcer 1½ in. above the right internal malleolus. The x-ray examination revealed extensive and marked calcification of all thigh and leg arteries. The ulcer healed with cod liver oil ointment and supportive bandaging. In 1952 the patient was in good health, his peripheral circulation was normal, and he had no complaints.

CASE 2.—A merchant, aged 42, was seen in March, 1936. X-ray examination of his legs revealed calcification of the blood vessels. He had no intermittent claudication. His urinalysis had been negative for sugar. His physical examination was entirely normal. The blood pressure was 120/75 mm. Hg. The peripheral pulses were normally palpable, with the exception of the left posterior tibial artery, which could not be felt during the first examination. The oscillometric readings were 4.5 at both ankles. All foot pulses, including the left posterior tibial artery,

The bibliographic references and the tables have been omitted from THE JOURNAL because of lack of space; however, they are included in the authors' reprints.

were normally patent on subsequent visits. He was last seen in 1950, when his arterial circulation was normal and he had no complaints.

CASE 3.—A man, aged 47, was first seen in June, 1938. He presented a history of asymptomatic varicosities for many years, which had repeatedly been treated by injections with sclerosing solution. He had no complaints. Examination revealed extensive varicose veins. All foot arteries were normally patent. Oscillometric readings at the ankle were 5.0 bilaterally. X-ray examination revealed extensive and marked calcification of all leg arteries. He was last examined in August, 1951. He had no complaints, and there was no change in the findings.

CASE 4.—A merchant, aged 45, was first seen in November, 1942. With the exception of a right-sided sciatica two years prior to his first examination, his previous history was noncontributory. For three months prior to his first visit, he had suffered from severe cramps in his right calf at night. These lasted from a few seconds to a few minutes. X-ray examination of the lower extremities had revealed extensive calcification of the blood vessels, and he had been treated with depropanex® (deproteinated pancreatic extract), physiotherapy, erythrol tetranitrate, whiskey, and sedatives. However, the night cramps did not subside. The general physical examination was entirely normal. All pulses were normally patent in both feet. Oscillometric readings were 4 at the right and 4.5 at the left ankle. Roentgenograms disclosed extensive arterial calcification in the lower extremities. The blood count was normal. Uric acid in the blood amounted to 4.4 and 5.0 per 100 cc., cholesterol total was 264 mg. and esters 162 mg. per 100 cc., calcium 12 mg. per 100 cc., and phosphorus 3.4 mg. per 100 cc. of blood. His night cramps were controlled with calcium lactate administered orally. He was last seen in May, 1951, at which time all foot arteries were normally patent and his oscillometric readings were 4.5 at both ankles.

CASE 5.—A printer, aged 46, was first seen in April, 1943. For four months he complained of pains in his right knee, especially when he arose after sitting for a while. He had no other complaints. Roentgenograms had been taken of his knees, which showed no joint pathological condition, but revealed extensive calcification of both popliteal arteries. Examination revealed an obese man who presented normal physical findings throughout. All extremity pulses were easily felt. Oscillometric readings were 5 at both ankles. He had some varicosities in the lesser saphenous system. Roentgenograms showed marked calcification of all lower extremity and some pelvic arteries. The right brachial artery was likewise calcified. Blood cholesterol concentration was 113 mg. per 100 cc., calcium 9 mg. per 100 cc., and phosphorus 7.8 mg. per 100 cc. During the eight years of follow-up his vascular status remained unchanged. He was last seen in April, 1951. His foot arteries were normally patent, he had no complaints, and the oscillometric readings were 5 at both ankles.

SUMMARY OF THE CLINICAL MANIFESTATIONS

To obtain a clear concept of the disease, it should be studied in its pure form. Thirty such cases are presented (group A). The common clinical features are the absence of symptoms or signs of occlusive arterial disease, the presence of normally patent arteries and normal oscillometric readings, and extensive and uniform arterial calcification on x-ray examination. The systemic blood pressure was normal in the entire group, with the exception of one patient with mild hypertension. In no case has thrombosis of an extremity artery developed over an average follow-up period of 5½ years. The age of the patients when first seen ranged from 27 to 69 years. In 17 of the patients nocturnal calf cramps were present, which were readily relieved by calcium lactate or dihydrotachysterol administered orally. In most cases the arterial calcification extended only to the pelvic brim, but in one case it involved the pelvic and upper extremity arteries as well.

Group B included 17 cases. Abnormal calcification elsewhere (renal and submaxillary calculi) were present in two patients. Osteoarthritis of the spine or other joints was found in nine cases. Paget's disease, gout, and acromegaly were represented once for each condition. In the three remaining patients of this group, latent syphilis, diabetes mellitus with a lymphosarcoma of the thigh, and sciatic neuritis were present. There are six cases in group C in whom Mönckeberg's sclerosis is complicated by the presence of intimal arteriosclerosis. This will be discussed later.

REVIEW OF THE LITERATURE

Arteriosclerosis is a descriptive anatomic term, which denotes the end picture of arterial diseases of different causes. Among these are essential hypertension, chronic kidney disease, familial hypercholesteremia, Raynaud's disease, and some instances of thromboangiitis obliterans (Buerger). Present medical nomenclature includes in the term arteriosclerosis, as a subgroup, human calcific degeneration of the media.[2] Historically, this concept is the result of Virchow's teachings that all forms of arteriosclerosis, intimal as well as medial, were due to a primary disease of the artery.[3] Nearly 100 years ago, Rokitanski [4] stated that the pathogenesis of arteriosclerosis was a deposition of substances on and into the intima of the artery from the blood stream. Two schools of thought as to the true nature of arteriosclerosis have grown out of the controversy between these two authors and can be traced in recent literature.[5] All observers agree that the clinically striking feature of intimal arteriosclerosis is the narrowing of the artery lumen and the resulting interference with arterial circulation, which causes tissue ischemia.

In spite of Virchow's conviction of the unitarian nature of arteriosclerosis, the different appearance of human arteriosclerosis proper and media "petrification" did not escape him.[6] Forty-seven years later, Mönckeberg presented evidence that human media calcification has a distinctive pathogenesis and etiology.[7] He demonstrated that in contrast to intimal sclerosis, human medial calcification does not lead to a diminution of blood flow. This has been confirmed since.[8] Faber [9] made histological studies of various arteries and noted line granules in the media very frequently. For example, there was a 66% incidence of such deposits in the internal iliac arteries of young persons (average 9 years of age). Faber thought that these changes represented an involutionary process that started at birth and continued throughout life. His findings in normal arteries resemble the earliest stages of Mönckeberg's arteriosclerosis. No data are available as to whether states of transition exist between normal arteries and fully developed Mönckeberg's arteriosclerosis.

Histologically, three stages of human medial calcification have been described.[8a] In the first, lime granules can be seen in the media near the internal elastic membrane within the connective tissue ground substance. The muscle fiber nuclei stain well at this stage. This suggests that necrosis of the muscle fiber [10] is not the primary disease.[11] In the second stage the calcium salts are more numerous, coalesce, and form welded rings and plates in the media, surrounding the circumference

of the artery. Atrophy of the muscle fibers due to compression may ensue. In the third stage a reparative inflammation, similar to a foreign body reaction, may be seen around the foci of calcification. Hyaline degeneration and thickening of the vasa vasorum of the adventitia are observed. In later stages bone may form at the site of media calcification,[12] and fractures with fibrous union have been described.[13]

While the anatomicohistological picture of Mönckeberg's arteriosclerosis is distinctive, little is known as to the pathogenesis of the condition. Experimental studies have not clarified it. Many agents have been used to produce experimental medial calcification. Among these are barium salts,[14] digitonin,[15] intraperitoneal and parenteral calcium injections,[16] epinephrine,[17] and calciferol.[18] By modifying the experimental technique [19] one and the same agent may produce intimal sclerosis as well. There is a basic difference between experimental and human medial calcification. Mönckeberg [20] pointed out that in experimental procedures

Fig. 1.—Characteristic calcification of Mönckeberg's arteriosclerosis. Note uniform deposition of calcium and complete outline of blood vessel.

necrosis of the artery media results, which eventually leads to calcification. In humans, no inflammatory changes preceding the appearance of lime salts in the artery media have been demonstrated. Some evidence has been presented [11] that true calcific degeneration of the artery media ground substance occurs in Mönckeberg's arteriosclerosis, much like the calcium dystrophy in other organs.

Media calcification has been described in the newborn and in children and young persons.[21] None of these cases appears to be true Mönckeberg's arteriosclerosis, since either intimal sclerosis and arterial occlusion or renal disease was present. Mönckeberg's first description [7] was based on 130 autopsies. He found a 42% incidence of media calcification. We believe that this figure is not representative for the general population because of the rather low incidence of pure cases. Mönckeberg noted that, in contrast to intimal arteriosclerosis, medial calcification involved the aorta less often than the femoral and brachial arteries and only rarely occurred in the coronary arteries. Lindbom [8c] stresses that medial calcification is severer in the femoral arteries while intimal thickening is more pronounced in the popliteal arteries. It has been stated that the bending portion of arteries such as the arteries overlying large joints are not involved with Mönckeberg's arteriosclerosis,[22] but in our series calcification was found in a popliteal and brachial artery. In 16 cases of medial sclerosis in which the popliteal arteries were subjected to special study, Lindbom [8c] found calcification more pronounced on the convex side and less pronounced on the concave sides of the arteries.

Autopsies of typical early cases in adults are not available because of the benign character of the condition. Most descriptions of human medial calcification have originated in autopsies of an old age group, when intimal arteriosclerosis is frequently present. This is perhaps why most pathologists regard Mönckeberg's arteriosclerosis and intimal arteriosclerosis as one and the same disease.[23] Some leave the question of identity open.[24] Few, following Mönckeberg's idea, believe that human medial calcification is a distinctive entity.[25]

Few data are found in the literature concerning the clinical course of the condition. Arterial calcification in persons with apparently normal circulation has been reported.[26] Leriche predicted that in these cases interference with blood flow would eventually occur.[27] The coincidence of Mönckeberg's arteriosclerosis with Paget's disease [27] and disturbances of calcium metabolism [28] has been pointed out. Night cramps in the calves of persons with Mönckeberg's arteriosclerosis have been described as a nonspecific symptom.[8d] The benign course of Mönckeberg's arteriosclerosis has been commented on by several observers.[29] In general, perusal of the clinical literature regarding Mönckeberg's arteriosclerosis reveals confusion about the nature of this condition. Most clinicians consider it to be a form of senile arteriopathy [30] or of cachexia or marasmus.[31] Only a few leave the question of identity open [32] or hold that artery medial calcification is a distinctive clinical entity.[33]

RADIOGRAPHIC FINDINGS

The roentgenographic appearance of the medial calcification seen in Mönckeberg's arteriosclerosis is quite typical (fig. 1). In the femoral arteries it takes on the appearance of two white finely sketched straight lines about ¾ cm. apart with a fine granular haze between. At approximately every centimeter there is a ½ mm. gap both in the lines and in the haze, giving the calcification a segmented appearance with a narrow translucency between the segments. Very fine calcific lines mark off the translucency above and below. The boundaries of the segments are irregular and can be made out only in the sharpest of radiographs and then only with a magnifying glass. In the smaller vessels especially around the ankles the lines and the haze are more granular and the segmentation easier to see, especially when enlarged. In the intermetatarsal arteries the grain is again finer but the calcification appears more clear-cut and the segmentation appears sharper. In contrast, the regular arteriosclerotic type of calcification appears in the femoral arteries as a number of coarse flakes that cannot be mistaken for the Mönckeberg type (fig. 2). In the smaller vessels it is more difficult to differentiate between these two types of calcification; however, when magnified, the calcifications in the arteriosclerotic type appear coarser, the sketched-line appearance is absent,

and the segmentation is not as clean-cut. The dense calcification frequently seen in the digital arteries of diabetic patients with peripheral vascular disease closely resembles the calcification typical of Mönckeberg's arteriosclerosis. From the x-ray appearance alone it is difficult to distinguish between the two types of calcification; however, uncomplicated Mönckeberg's arteriosclerosis is most pronounced in the large arteries and seldom involves the digital arteries to a striking degree.

COMMENT

Certain features of Mönckeberg's arteriosclerosis are of special interest. The earliest case observed in the present series was discovered by accident at the age of 27. At this time calcification of the blood vessels was already dense and uniform, and it could not be determined how long this calcification had been present. Search of the clinical and x-ray literature reveals no report of medial calcification without vascular occlusion in younger age groups. Medial calcification seen in infants has always been associated with vascular disease and probably represents a different pathological process. In the thousands of roentgenograms made in children who have suffered fractures, marked calcification could not fail to be observed; yet no report of such a case could be found. It would seem that Mönckeberg's arteriosclerosis does not occur before the twenties. Further observation may show that this statement is not correct. It is curious that Mönckeberg's arteriosclerosis represents a disturbance in calcium metabolism but does not manifest itself before the age of 27.

Cramps in the calf muscles occurring at night, which awaken patients from sleep, appear to be one of the features of Mönckeberg's arteriosclerosis. Such cramps were noted in 17 instances. They are promptly relieved by taking small doses of calcium lactate by mouth. Likewise, administration of dihydrotachysterol causes prompt cessation of such cramps. Chemical studies of the blood show the total calcium level in these patients to be within the normal range. Osteoarthritis of the spine was noted in a relatively large number of patients with Mönckeberg's arteriosclerosis. Renal and submaxillary calculi were present in two cases. Paget's disease was present in one case. The frequent association of Mönckeberg's arteriosclerosis with osteoarthritis and Paget's disease was commented on by Leriche.[27] The occurrence of Mönckeberg's arteriosclerosis, believed to be a primary disturbance of calcium metabolism, with other manifestations of abnormal calcification is noteworthy.

Mönckeberg's arteriosclerosis has been reported to be frequent in tropical countries [1] and also in the native Negro population of South Africa.[34] It has been thought that excessive exposure to ultraviolet light due to nakedness or intense sunlight may influence calcium metabolism in such persons. Special studies of these groups are desirable and might aid in the understanding of Mönckeberg's arteriosclerosis. It is apparent that there is a considerable confusion in the clinical and pathological literature about the nature of Mönckeberg's arteriosclerosis. Most reports are based on patients in the older age groups. With advancing age, intimal arteriosclerosis may be expected to develop in patients with this disease in the same fashion as the rest of the population. The occurrence of both conditions in the same patient must therefore be regarded as coincidence and does not indicate any relation between them.

The essentially benign nature of Mönckeberg's arteriosclerosis should be stressed. There is no instance of thrombosis occurring in an extremity artery while under observation in our series. Gangrene has never developed nor has a leg ever required amputation. Therefore, no treatment, either active or prophylactic, appears to be necessary.

SUMMARY AND CONCLUSIONS

The clinical picture in 53 cases of Mönckeberg's arteriosclerosis is presented. The characteristics of the disease are extreme calcification of the arteries of the lower extremities in persons who have no symptoms or signs of impaired circulation. The period of follow-up ranged from 1 to 15 years.

The prognosis in Mönckeberg's arteriosclerosis is good. Thrombosis of the extremity arteries does not occur, and manifestations of impaired circulation, such as intermittent claudication, ulceration, or gangrene, are strikingly absent. No treatment of any kind is necessary. Nocturnal leg cramps occur in one-third of the cases and can be promptly relieved by calcium lactate given orally.

Pathologically, Mönckeberg's arteriosclerosis is characterized by a deposit of calcium in the media of the arteries, believed to be due to calcific dystrophy of the media ground substance. There is no thickening of the intimal layer, which is the most striking feature of intimal arteriosclerosis, and the blood vessel lumen is therefore not narrowed. The surface of the intima remains uninjured, and thrombosis does not occur.

Roentgenologically, typical cases show dense uniform calcification, which outlines the major arteries and their branches. The calcium appears to be deposited in transverse lines giving the appearance of a chain of rings similar to a goose neck. In contrast, calcification in intimal arteriosclerosis is patchy, dispersed, and tends to be deposited in the long axis of the blood vessels.

Fig. 2.—Characteristic calcification of intimal arteriosclerosis. Note patchy distribution of calcification in the longitudinal axis of the blood vessel.

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RELATIONSHIP OF TONSILLECTOMY TO POLIOMYELITIS

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There are still honest differences of opinion regarding the hazard of tonsillectomy in the presence of poliomyelitis. Some conflict and confusion exist among various reports and analyses. This is an attempt to answer most simply and clearly the question, "Does the hazard from throat operations make it advisable that such operations be limited during the prevalence of poliomyelitis?" Previous reports have been reviewed and some additional data added. These suggest that if poliomyelitis does occur within one month after tonsillectomy it is likely to be of the severer bulbar form. If that conclusion is valid and if it is corroborated by experimental or other evidence, it seems to me sufficient to determine a proper decision. The table summarizes representative reports. The reports have been modified for uniformity. Bulbar, bulbospinal, and encephalitic cases have been grouped together and compared on a percentage basis with spinal cases. So-called mild and nonparalytic cases have been excluded because of doubtful diagnostic criteria in some reports. Since most positive reports indicate that the period of one month postoperatively is the time of danger, only those figures are included that clearly relate to that period.

I have tried to eliminate questionable or unusual data. The unusual is much likelier to be reported and to sway opinion out of proportion to its relation to a broad base of investigation. The Krill and Toomey [1] report of the five deaths in one family following tonsillectomy is probably quoted oftenest. Yet Hilding's [2] report of poliomyelitis occurring in four brothers after swimming in a contaminated pond has been scarcely noted. Three had the bulbar form, but this occurred in only one of the two brothers who had tonsillectomies within a month. Data obtained by questionnaires are probably not more reliable than the work of the least careful reporter. I tried to obtain reliable data as a participant in the Cunning [3] investigation but doubt that my own answer was of statistical standard. The striking John Anderson [4] report from Utah for 1943 was based in part on questionnaires answered by only 81% of those to whom they were sent. As findings were based otherwise on 136 of 400 hospitalized patients, some questions might be raised as to mild cases not noticed or recorded. This same author found in Utah in 1945 the unusual incidence of 47% of bulbar poliomyelitis in children from 6 to 10 years of age. This suggests an unusually virulent strain of the disease. Certain other data hardly seem relevant. The number of tonsillectomies done at a time and place when virus was not present obviously could have little relation to poliomyelitis, and where the positive samples are small such inclusion only blurs the calculation. Also reports of cases of bulbar poliomyelitis following tonsillectomy do not seem to mean much unless the ratio to spinal types in the same epidemic are given at the same time.

The recent report of Siegel, Greenberg, and Magee [5] could, I believe, well serve as a model. These authors studied the reported poliomyelitis cases in New York City from 1944 to 1949, the first and last years of which were epidemic. This represented a broad base of probably average type. Data were obtained directly by diagnosticians or social workers in each individual case. Two methods were checked against each other. By one method the observed incidence of spinal and bulbar poliomyelitis after tonsillectomy was checked against the expected incidence from over-all figures. In the second method for each of the reported 194 cases of poliomyelitis occurring after tonsillectomy random samples were chosen from the records, which matched as closely as possible the observed cases by age, sex, race, time of onset, and borough of residence. This study seems to yield credible data, and the conclusions are stated conservatively. One can agree that for the period studied in New York City tonsillectomy did apparently increase the incidence of poliomyelitis immediately following operation, particularly in the 5 to 9 age group, and that when poliomyelitis did occur within one month of tonsillectomy the incidence of the bulbar form was significantly higher. Excluding nonparalytic and mild cases, as I did from their figures, the rate post-tonsillectomy was 56.7% for bulbar poliomyelitis against the over-all epidemic rate of 25.5%. The report of G. W. Anderson and his associates [6] from Minnesota seems to satisfy desirable criteria and give valid answers. This seems true to me also of Alden Miller's report, although the conclusions do not quite agree. Paul M. Pedersen's report [7] from San Francisco seems to have been carefully prepared.

I am adding a report of statistics gathered from the Rockford, Ill., epidemic of 1945 by Dr. Norman J. Rose of the Illinois State Health Department. Of 305 cases of poliomyelitis 8 had had tonsillectomy within one month of the onset of the disease. Of these eight all but one, or 87.5%, contracted bulbar or bulbospinal poliomyelitis and three died. The proportion in the third to sixth month postoperatively and over was not significant. Of the 144 patients in this epidemic who had not

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Based on a paper read before the Joint Meeting of the Section on Laryngology, Otology, and Rhinology, and the Section on Pediatrics, at the 101st Annual Session of the American Medical Association, Chicago, June 12, 1952.

1. Krill, C. E., and Toomey, J. A.: Multiple Cases of Tonsillectomy and Poliomyelitis, J. A. M. A. **117**: 1013 (Sept. 20) 1941.

2. Hilding, A. C.: Simultaneous Poliomyelitis in 4 Brothers 2 of Whom Had Recently Had Tonsillectomies, Ann. Otol., Rhin. & Laryng. **57**: 217 (March) 1948.

3. Cunning, D. S.: Poliomyelitis-Tonsillectomy Survey—Year 1949, Laryngoscope **60**: 615 (July) 1950.

4. Anderson, J. A.; Holley, E. B.; Kitto, W., and Thouin, P.: Infantile Paralysis in the State of Utah in 1945, Rocky Mountain M. J. **44**: 602 (Aug.) 1947.

5. Siegel, M.; Greenberg, M., and Magee, M. G.: Tonsillectomy and Poliomyelitis: Studies on Incidence in 1949, J. Pediat. **38**: 537 (May) 1951; Tonsillectomy and Poliomyelitis: Frequency of Bulbar Paralysis, 1944-1949, ibid. **38**: 548 (May) 1951.

6. Anderson, G. W.; Anderson, G.; Skaar, A. E., and Sandler, F.: The Risk of Poliomyelitis After Tonsillectomy, Ann. Otol., Rhin. & Laryng. **59**: 602 (Sept.) 1950.

7. Pedersen, P. M.: A Statistical Study of Poliomyelitis in Relationship to Tonsillectomy, Ann. Otol., Rhin. & Laryng. **56**: 281 (June) 1947.

had tonsillectomy 23, or 16%, had bulbar or bulbospinal poliomyelitis. The finding in this epidemic is striking.

There may be some question of the complete validity of strong positive reports as strikingly high percentage results are likely to be reported, severer forms of the disease are likely to come to attention especially since they are likelier to be sent to hospitals, and men of stronger convictions are likely to note such cases and report them. Making all allowances, however, it appears from the tabulation that the danger of having the severer form of the disease is at least twice as great as it would have been had tonsillectomy not been done. The ratio should probably not be too precisely stated since some of the reports included few persons. The figures cited seem also to indicate that after tonsillectomy not only is bulbar involvement increased relatively to spinal but that it is increased absolutely. This increase in bulbar cases might account for the small general increase of poliomyelitis indicated by some reports.

Questions are raised as to the applicability of animal experiments to humans, but with some allowances such work indicates that results quoted in the table are to be expected. A number of observers have found that in susceptible simians a virulent strain of poliomyelitis virus could produce the disease when swabbed or sprayed on the recently operated tonsil bed or even after feeding of the virus following tonsillectomy. This was true especially in cynomolgus monkeys, on which the animal-adapted Y-SK strain of Lansing virus was used. When such infection occurred it was usually of relatively short incubation corresponding to the minimal incubation period in human beings. It was usually of the bulbar type. Histological examinations and inoculation experiments indicate that the spread was along regional nerves to the brain stem.

Bodian [8] believes that tonsillectomy does increase the danger of bulbar poliomyelitis, but he believes this an atypical mechanism. He has apparently demonstrated that a viremia is an important part of the typical pathogenesis with invasion of the central nervous system secondary. Horstmann [9] and others suggest that general conditions such as anesthesia, anoxia, general strain, pregnancy, and trauma are important and may precipitate paralytic symptoms. Horstmann suggests also that central effects may be a reflex to regional trauma.

It is interesting that, while rhesus, African green, and cynomolgus monkeys were all susceptible to this virus when it was directly inoculated into the brain, only the cynomolgus species was regularly infected on application of the virus to the raw wound in the throat. Sabin was able to produce disease in rhesus monkeys when the virus was injected deeply into the tonsillopharyngeal area but not when it was swabbed into the wound. These differences in host susceptibility and relative virulence of the strain of virus might even explain differences in the reported incidence of human bulbar cases after tonsillectomy, as for instance between Kinney in Ohio of 20% and Anderson in Utah in 1943 of 100%. It may also be possible that differences in surgical techniques and anesthesia may have considerable effect.

Cunning's report indicates appendectomies and other operations were associated with increased incidence of poliomyelitis. Gard reported bulbar poliomyelitis following dental extraction in two patients within 6 to 10 days respectively. Miller has reported a higher percentage of poliomyelitis after dental extraction than after tonsillectomy. Perhaps some of the zeal exercised in restriction of tonsillectomy should be expended in the investigation and control of dental work and other operations in poliomyelitis epidemics.

The question as to whether poliomyelitis in all forms is increased by operation seems much harder to answer and also much less important if a decision is accepted in regard to the bulbar form. Such incidence has been calculated on a study of the expected incidence in relation to that actually observed after tonsillectomy. The calculations are difficult and the results confusing. In the

Reported Ratio of Bulbar and Spinal Poliomyelitis Occurring Within One Month of Tonsillectomy *

Author	Cases	Spinal	Bulbar	Bulbar or Bulbospinal, %	Bulbar and Bulbospinal in Epidemic, %
Aycock, Luther 1929	16	7	9	56	....
Vermont 1912-1913 ; Massachusetts 1927-1931	25	5	20	80	....
Bordon 1931	4	..	4	..	....
Ontario Health Dept. 1937	6	2	4	..	....
Stillerman, Fischer 1938	11	2	9	..	11.2
Eley, Flake 1938	21	4	17	..	....
Fischer, Stillerman and Manks 1941	9	2	7	..	....
Piszczek (Cook County) 1943	12	2	10	..	....
Howard 1944	6	3	3	..	....
Rose (Rockford, Ill.) 1945	8	1	7	..	....
Kinney 1947	5	4	1	20	....
Pedersen 1947	9	3	6	..	12.0
Siegel, Greenberg, and Magee (New York City) 1944-1949	26	9	17	..	25.5
Anderson, G. W. (Minn.) 1950	19	7	12	..	....
Anderson, J. A. (Utah) 1943	17	0	17	100	....
Krill, Toomey 1941	16	3	13	..	....
Total	210	54	156	73.8	....

* Only reports clearly bearing on this question were used. Authors' totals were corrected to exclude nonparalytic and mild cases.

first place it is estimated that only from 1 to 20 of those infected (Casey) to 1 to 100 or even 1 to 1,000 (Howe) show symptoms on which a diagnosis is made. That reduces the notation of positive samples markedly and may weigh the results unduly in favor of the severer forms of the disease. Again it is quite difficult to match the exact number of tonsil operations with the time and place of epidemics. I have found on the Chicago North Shore that the epidemic areas in different years are sharply circumscribed even within one county. In addition it has come to be common practice to limit tonsillectomies sharply during epidemics, which again lessens the positive findings. I shall leave to others the answer to this question. Dr. Alden Miller's careful study indicates that in Los Angeles this increase in poliomyelitis

8. Bodian, D. W.: Reconsideration of the Pathogenesis of Poliomyelitis, Am. J. Hyg. **55**: 414 (May) 1952. Faber, H. K.; McNaught, R. C.; Silverberg, R. J., and Dong, L.: Experimental Production of Post-Tonsillectomy Bulbar Poliomyelitis, Proc. Soc. Exper. Biol. Med. **77**: 532 (July) 1951.

9. Horstmann, D. M., and Paul, J. R.: The Incubation Period in Human Poliomyelitis and Its Implications, J. A. M. A. **135**: 11 (Sept. 6) 1947.

after tonsillectomy has not been significant. All reports in large numbers indicate that in any case any increase in all forms of poliomyelitis is small in proportion to the total number of operations. But it is important to project any calculation on the narrowly circumscribed time and place in which the virus is concentrated in any epidemic. The saving of one or two lives looms large in a small community, while it might not be a small decimal in a national figure. With the great improvement in mortality figures in general in recent years even small differences assume importance. It is important, however, to maintain a sense of proportion in relating poliomyelitis to other diseases. For instance, among the Metropolitan Life Insurance Company policyholders the crude death rate in 1951 per 100,000 was only 0.8 for acute poliomyelitis while it was 13.4 for rheumatic heart disease and 12.3 for nephritis and nephrosis.

This of course brings up the question of the importance of focal infection and the relative urgency of tonsillectomy. There is material in this question for endless debate among the groups gathered here, and no mathematical expression of the importance of operation is possible. My own feeling is that it is seldom urgent to do a tonsil operation, but that it may be so important in specific cases that no absolute restriction should be made against it at any time in light of present evidence. That in turn will bring up the question of what regulations should be devised for operations during epidemics. In my opinion the following conditions make it important to remove tonsils and adenoids without too much delay: persisting chronic or subacute infection with marked impairment of general health and nutrition, severe repeated acute attacks, attacks with recurring acute otitis media, or important progressive impairment of hearing due especially to serous otitis. There are important general conditions that have seemed by sequence, exclusion, matching quantitative culture, and other tests to be related to focal infection of the tonsils. In rheumatic heart disease and nephritis the causal relationship seems occasionally very definite.

But it is usually equally important that operation be delayed past any important acute infection in the primary and secondary focus, and this will usually remove the procedure from the emergency class; however, I am now watching two patients, one with a pediatrician and one with an internist, in whom severe acute nephritis developed with acute recurring throat infection. We agree that the foci should be removed at the time of choice after complete subsidence of acute infection. The end of the cooling-off period will bring us into the poliomyelitis season, and we all agree that here danger is greater in delay than is any risk of poliomyelitis. Improvement of treatment and apparently lessened mortality from poliomyelitis should perhaps have some weight in considering this question. If tonsillectomy seems necessary it might be advisable to paint the oropharynx with a 2% tincture of iodine just before removal. Faber, McNaught, and their associates found this prevented poliomyelitis in six cynomolgus monkeys whose throats had previously been swabbed with effective virus. They are not yet ready, however, to recommend this procedure as routine.

Fixed rules are advisable only if there are communities where ethical and scientific standards are not upheld voluntarily. But public opinion will usually be sufficient to secure compliance with proper standards. Already a certain amount of propaganda has emphasized, if not exaggerated, the risk of tonsillectomy during poliomyelitis epidemics. It is perhaps questionable whether the health commissioner should prohibit tonsil operations during seasons of epidemics or even has the power to do so; however, his expressed opinion that unnecessary throat operations not be done at a particular time will usually bring compliance.

In exceptional cases decision is to be left to the attending clinicians as to the need for operation. In the Evanston Hospital practically all cases requiring operation are seen both by a pediatrician and a laryngologist, and either who takes a positive stand has the power of veto. Conflict seldom arises. Where in 1945, 255 tonsil operations were done in July through October, last year 11 were done. At the Evanston Hospital during the past 10 years 1,245 tonsil operations have been done from July through October. Up through 1945 there was no limitation during the poliomyelitis season. During the past 10 years, so far as we have been able to determine, only one poliomyelitis patient has been admitted with a history of tonsil operation within one month and that was done elsewhere. The problem is somewhat different where epidemics are not so sharply seasonal, as in California and the South. Apparently, however, in nearly all regions there are enough months of diminished risks when routine operations may be done.

Simple procedures seem to be warranted for guidance for tonsillectomy and could be outlined as follows: 1. Local health authorities, city or county, should declare when acute poliomyelitis has become epidemic in a certain area and should advise that routine tonsillectomies not be done at that time. The attitude should vary with the endemicity of disease, climatic region, and disease in previous years. 2. Danger of the epidemic should be noted by hospital staffs or other medical groups and members be advised not to schedule elective tonsil operations during this period. 3. When the surgeon and another clinician who cared for the patient or have seen him in consultation agree that delay of operation is dangerous, it should be permitted after full explanation to parents or guardian.

CONCLUSIONS

From my study of the evidence it seems that the following conclusions are tenable: Tonsillectomy does significantly increase the incidence of bulbar poliomyelitis when done during epidemics. The over-all incidence is probably increased but perhaps only by the increase of bulbar poliomyelitis. Elective tonsillectomies should be restricted in epidemic periods. Investigation should be made of a similar relationship of dental and other oral and general operations to poliomyelitis and the need of restricting them in epidemic.

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THE FIRST WORLD CONFERENCE ON MEDICAL EDUCATION

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One of the aims of the World Medical Association is the improvement of medical education. At the fourth General Assembly of the association in New York, in 1950, preliminary thought was given to the holding of the first World Conference on Medical Education. At the fifth General Assembly in Stockholm in 1951, it was definitely determined to hold such a conference. To quote Dr. Hugh Clegg,[1] the editor of the *British Medical Journal*, "After all, medical education is fundamental to our professional life and work. Without medical education the people of the world would still be at the mercy of the witch-doctor and the cultist; many of them, of course, still are. Perhaps it is because the subject is so vast that doctors have so far fought shy of staging an international discussion on it."

Again Dr. Clegg [1] said, "Now, then is the time to take stock. Medicine, still an art, has become so much more a science. Has medical education in its conceptions and methods, kept pace with the advances of medical science? I doubt it, for the reason that medical education must perforce be in the hands of doctors educated and brought up in a setting entirely different from that of today. This generalization, like any other, is bound to be too sweeping. In some centers innovation and experiment must be going on; in others tradition probably has too strong a hold."

The announcement of the conference aroused tremendous interest all over the world. Letters were written to the deans of all medical schools asking what problems they would like to have discussed. While a great variety of topics were suggested, there was a remarkable unanimity of desire to see certain topics discussed. Considerable discussion took place as to the scope of the conference. It was decided to limit it to the problems of undergraduate medical education. The term "undergraduate" is used in the sense in which we interpret it in the United States. Three main themes were considered, and then these three were expanded to four. They are: (1) requirements for entrance into medical studies; the selection of students; (2) aims and content of the medical curriculum; (3) techniques and methods of medical education; and (4) preventive and social medicine (by "social medicine" is meant what the British call "human ecology").

The conference will be held in London, England, Aug. 22 to Aug. 29, 1953. Headquarters will be at the British Medical Association House. Aug. 22 and 23 will be devoted to registration and a general get-together. The conference will formally open with a plenary session on Aug. 24. This session will serve as a background and orientation for the conference. On Aug. 25, 26, and 27, the conference will break up into four sections, one section being devoted to each of the four main themes already listed. On Aug. 28 and 29, there again will be plenary sessions to bring together the thoughts developed in the sections.

The conference will be under the auspices of the World Medical Association, with the collaboration of the World Health Organization, the Council of International Organization of Medical Sciences, and the International Association of Universities. It will be under the patronage of the secretary of state for Scotland, the ministers of education and health for England and Wales, and the chancellor of the University of London.

The president of the conference will be Professor Sir Lionel Whitby, vice-chancellor of the University of Cambridge and Regius Professor of Physics. The deputy president will be Prof. W. Melville Arnott, professor of medicine at the University of Birmingham. Four vice-presidents have been chosen, each to preside over one of the sections. Section I will be presided over by Dr. Victor Johnson of the Mayo Foundation and the Council on Medical Education and Hospitals of the American Medical Association. Section II will be presided over by Sir Arcot Mudaliar, vice-chancellor of the University of Madras, India. Section III will be presided over by Dr. A. Hurtado, professor at San Marcos University, Lima, Peru. Section IV will be presided over by Prof. René Sand of the Université Libre, Brussels, Belgium.

The opening plenary session will be devoted to the following topics:

The Challenge to Medical Education in the Second Half of the 20th Century.
What is Education?
The History of Medical Education.
Medicine—a Technology or a Profession?

Some of the topics to be discussed in the four Sections are as follows:

In Section I (Dr. Johnson's Section)

General Education in an Age of Science.
Requirements for Entry into Medical School.
History of Science.
Teaching Scientific Method.
Science is Measurement.
Biology Fundamental to Study Medicine.
How Much Chemistry and Physics?
Introduction to the Social Sciences.
Selection of Students.
Use and Value of Intelligence and Aptitude Tests.
Method and Value of Interviews.
Examination and Discussion Group.

In Section II (Sir Arcot Mudalier's Section)

Anatomy for the Doctor.
Physiology for the Doctor.
Physiology and Anatomy Taught as One Subject.

Secretary General, the World Medical Association.
Presented at the Annual Congress on Medical Education and Licensure, Chicago, Feb. 9, 1953.
1. Clegg, H.: First World Conference on Medical Education, World M. A. Bull. 4: 241, 1952.

Pathology—The Basic Clinical Science.
Pharmacology and the New Therapeutics.
Aim of the Medical Curriculum.
Teaching of Psychological Medicine.
Teaching of Medicine and Surgery as One Discipline.
Teaching of Minor Surgery.
The Doctor, the Midwife, and Obstetrics.
Is Pediatrics a Branch of Medicine?
The Place of Specialties in the Curriculum.
Is an Intern Year Necessary?
The Undergraduate and General Practice.
The Balanced Curriculum.

In Section III (Professor Hurtado's Section)

The Hospital Bedside Teaching of Medicine.
Teaching Surgery at the Bedside and the Theatre.
Teaching in the Clinic.
Teaching in the Home.
The Clinico-Pathologic Conference.
The Laboratory in Teaching Experimental Medicine.
Visual Aids in Education.
One-Way Observation Screen.
The Moving Picture in Medical Education.
The Still Picture.
The Lecture in Education.
The Value of Grour Discussion.
The Text Book in Education.
Library and Reference Services.
The Museum and the Scientific Exhibition.
The Students' Clinical Society.
The Examination Paper.
Practical Tests.
Oral Examination.
Teacher's Report on Work.
Why Students Fail.

In Section IV (Professor Sand's Section)

Present Status of the Teaching of Preventive and Social Medicine.
Social Medicine as an Academic Discipline.
Teaching Social Medicine in the Pre-Clinical Period.
Social Medicine in the Clinical Period.
The Need for Reorientation of Teaching.
The Teaching of Epidemiology.
Demography and Vital Statistics.
The Teaching of Medical Genetics.
The Teaching of Social Psychology.
Social Environment and Individual Illness.
Social Case Discussion.
Teaching of Occupational Health.
The Use of Student Health Services in the Education of the Student.
Infant and Child Care as a Medico-Social Problem.
The Teaching of Nutrition.
Integration of the Teaching of Social Medicine in the Medical Curriculum.

In the final two days of plenary sessions there will be reports of the vice-presidents and rapporteurs on the results of the section meetings. The general topic will be "Has Medical Education Kept Pace with the Rapid Development of Medical Science?" Topics will be presented in prepared papers, by discussion by selected participants, and by general discussion. Throughout the sessions of the conference a determined effort will be made to bring out a free exchange of ideas, to develop ways and means of assisting underdeveloped countries, and to gather the opinions of practicing physicians—the ultimate consumers of medical education. No attempt will be made to adopt any resolutions. Simultaneous translation into English, French, and Spanish will be provided throughout the conference.

A special issue of the *British Medical Journal* will give background material and will be distributed at the time of registration. After the conference the proceedings will be published. If funds permit, a permanent committee will be established to send technical advisors to countries deserving assistance. This, however, is only a pious hope at present. Presentation of material that allows countries to compare standards is helpful, but a "follow-through" is necessary if the standards of medical education are to be raised anywhere in the world.

Invitations have been sent to all medical schools, national and international bodies interested in medical education, government representatives, and outstanding educators. Any physician may attend the conference. A reception will be held the day before the conference officially opens. The evening before the conference closes there will be a dinner. At some time during the conference there will be a break to permit visits to educational institutions or places of historic interest. The United States Committee of the World Medical Association is planning a tour for Americans. This will include the Medical Education Conference and the seventh General Assembly of the World Medical Association, which will take place at the Hague, Holland, the following week.

The headquarters of the World Medical Association at 2 East 103rd Street, New York 29, N. Y., will be glad to furnish further details as they are decided. I hope there will be a large delegation from the United States attending what I believe will be an outstanding event in the history of medical education.

2 East 103rd Street.

Papular Urticaria.—Papular urticaria is a cutaneous syndrome, characterized by the development of wheals and papules on the exposed parts of the skin. It occurs predominantly in children between the ages of two and seven years. It appears almost exclusively in the hot weather and is apt to recur for several summers before disappearing spontaneously. There is reason to believe, on the basis of clinical, epidemiologic, allergic, histologic, and therapeutic evidence, that many cases of this disease are due to allergy to insect bites. The responsible insect will vary in different localities depending on the dominant biting insect present. Most patients with papular urticaria will react with immediate and delayed positive reactions to the responsible insect allergen, while normal controls will have a negative response or a positive reaction only to the thirty-minute reading. Histologic examinations of the lesions of papular urticaria, positive skin tests, and insect bites show a similarity providing the lesions are at the same stage of clinical development. Treatment with DDT as a local application and as an insect spray will "cure" the vast majority of cases of papular urticaria.—B. Shaffer, M.D., C. Jacobson, M.D., and P. P. Pori, M.D., Papular Urticaria, *Annals of Allergy*, July-August, 1952.

ALLERGY TO PROCAINE HYDROCHLORIDE WITH THREE FATALITIES

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and
Creso de Castilho Ribeiro, M.D., Rio de Janeiro, Brazil

This report deals with three fatalities encountered by us during the past year, resulting from an immediate reaction to procaine hydrochloride. Several other severe but nonfatal reactions were seen by us during the same interval but are not included in this paper. These three cases are reported for the following reasons: to emphasize that fatalities may result from procaine hydrochloride; to indicate the possible mechanism of these reactions; and, finally, to discuss the classification, recognition, and treatment of such allergic conditions.

As far back as 1924, the American Medical Association, realizing that reactions from local anesthetic drugs deserve investigation, appointed a committee to study and report on the subject. This committee reported 43 deaths from local anesthetic drugs, of which 26 were due to procaine hydrochloride and cocaine hydrochloride, and two were due to procaine hydrochloride alone.[1] Fourteen more fatalities due to such agents were added in a report by the same commission in 1928, covering a period of three years.[2] In this report three fatalities were found to be due to cocaine hydrochloride, two were due to cocaine hydrochloride and procaine hydrochloride, and eight were due to procaine hydrochloride alone. Nevertheless, it is stated that procaine hydrochloride is undoubtedly the safest of all local anesthetics now in general use. Ireland, Ferguson, and Stark conducted a survey among some of the largest otolaryngological clinics in the United States and Canada. They report 7 fatalities due to cocaine hydrochloride and tetracaine (pontocaine®) hydrochloride in 39,278 instances of local anesthesia.[3] Schindler,[4] reviewing information from 60 clinics doing gastroscopic examinations in the United States, England, and Australia, found 3 fatalities due to cocaine hydrochloride and tetracaine hydrochloride in a total of 22,351 patients. Furstenberg [5] had 3 fatalities in 30,000 tonsillectomies performed under cocaine hydrochloride anesthesia. In this article, he examines critically some of the reports referred to above and points out that the available facts "do not seem to justify the pervasive fear and apprehension concerning the danger of cocaine anesthesia for tonsillectomy." In discussing this paper Williams reports 2 deaths due to cocaine hydrochloride in a total of 6,378 nose-throat operations.

When one considers the very large number of patients who daily receive procaine hydrochloride and related drugs without severe reactions, one must obviously conclude that they are relatively safe; however, it is an undisputed fact that on rare occasions serious unexpected side-effects may occur. Because of this, it is well to call attention to this problem again in order to emphasize its importance.

REPORT OF CASES

CASE 1.—A man, aged 58, has had several hospital admissions for the treatment of status asthmaticus since 1947. At that time he had a complete allergy survey and treatment and showed marked symptomatic improvement. Unfortunately, after he discontinued treatment he began to experience severe asthma. His last hospital admission for severe intractable asthma was in December, 1951. At this time he improved after usual therapy for status asthmaticus, including epinephrine (adrenalin®), ephedrine, aminophylline, large doses of iodides, oxygen, and cortisone. Physical examination on admission was negative except for marked bilateral expiratory wheezing and slight cyanosis. Blood pressure was 160/90 mm. Hg. Results of laboratory examinations were as follows: urine, normal; blood count, normal; sedimentation rate, 3 mm. per hour; serologic tests, negative; and sputum, electrocardiogram, roentgenograms of chest, and cholecystogram, negative. His condition improved sufficiently to warrant proceeding with a bronchogram. At this time there was no respiratory embarrassment. He was given the usual routine anesthesia with 1% procaine hydrochloride, following which a tracheal catheter was inserted without difficulty. Chloriodized oil (iodochlorol®) was then introduced. The only other drugs that were administered were secobarbital (seconal®), codeine,

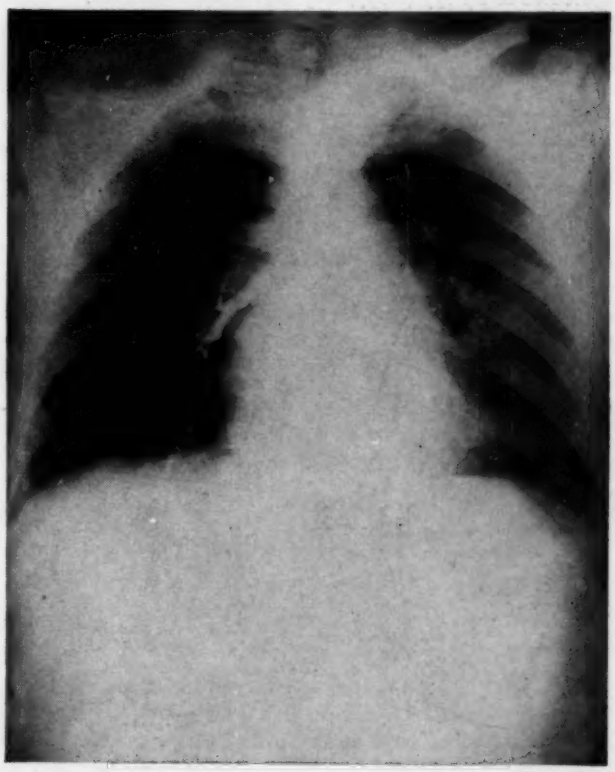

Fig. 1 (case 1).—Bronchogram showing a small quantity of chloriodized oil in the trachea, the main bronchi, and the basilar segments of the lung.

From the Section on Allergy, School of Medicine, University of Pittsburgh, and the Montefiore Hospital.

1. Mayer, E.: The Toxic Effects Following the Use of Local Anesthetics, J. A. M. A. **82**: 876 (March 15) 1924.
2. Mayer, E.: Fatalities from Local Anesthetics, J. A. M. A. **90**: 1290 (April 21) 1928.
3. Ireland, P. E.; Ferguson, J. K. W., and Stark, E. J.: The Clinical and Experimental Comparison of Cocaine and Pontocaine as Topical Anesthetics in Otolaryngological Practice, Laryngoscope **61**: 767 (Aug.) 1951.
4. Schindler, R.: Results of the Questionnaire on Fatalities in Gastroscopy, Am. J. Digest. Dis. **7**: 293 (July) 1940.
5. Furstenberg, A. C.; Wood, L. A.; Magielski, J. E., and McMahon, G. F.: An Evaluation of Cocaine Anesthesia: The Perpetuation of the Equivocal Concepts, Tr. Am. Acad. Ophth. **55**: 643 (July-Aug.) 1951.

and atropine prior to the use of procaine hydrochloride; however, the patient had been given these drugs previously during his period of hospitalization and showed no ill-effects. Within minutes following this procedure and while he was still standing behind the fluoroscope, the patient became acutely ill, cold, and clammy, and showed marked choking, dyspnea, and wheezing. A roentgenogram of the chest was quickly obtained while the patient was in this position. Figure 1 shows chloriodized oil distributed in the trachea and main bronchi but not throughout the rest of the bronchial tree. This was interpreted to be due probably to obstruction produced by the marked bronchospasm that suddenly developed. In spite of prompt and adequate emergency measures, including oxygen, epinephrine, and other drugs, he became worse and died shortly after the onset of the reaction. This patient had received massive doses of iodides throughout his hospital stay without any untoward effect. He was also skin-tested (intracutaneously) with peanut extract and gave a negative reaction. Hence the possibility of this sudden reaction following exposure of chloriodized oil or the possibility of sensitivity to peanut oil may be excluded. This is a fatality that must be attributed to allergy (atopy) to procaine hydrochloride.

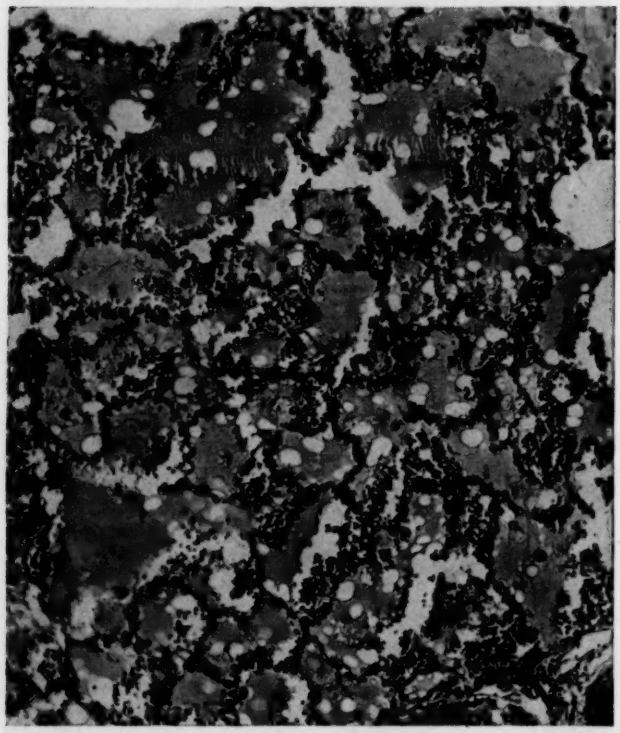

Fig. 2 (case 3).—Section of the lung showing hyperdilatation of the alveoli with rupture of the walls. The alveolar walls are thickened, and the majority of them are filled with serum and red blood cells.

Case 2.—A man, aged 45, was admitted to the hospital in June, 1947, for right-sided pneumonectomy for bronchogenic carcinoma. He returned six months later for the treatment of a complicating hydropneumothorax and empyema. This was treated with antibiotics and drainage under a local procaine hydrochloride anesthesia. About a year later, in January, 1948, he had a biopsy of an axillary lymph node under procaine hydrochloride anesthesia. This showed only lymphadenitis and no metastasis. He was under constant observation for a period of about three years. He was readmitted for dyspnea, cough, and pain in the chest in September, 1951. During the course of the investigation for this condition, he had a bronchoscopic examination under tetracaine hydrochloride anesthesia. It should be emphasized that the patient never showed any untoward reactions to the procaine hydrochloride or tetracaine hydrochloride anesthesia. While in the hospital, he also complained of gastric symptoms, which proved to be due to a lesion located in the cardia of the stomach, mostly on the posterior wall. Because the patient continued to have chest pain for which he had received codeine and morphine, it was decided to do an intercostal nerve block, employing 2% procaine hydrochloride. No other drugs were used. There was no reaction from this procedure. There was some hesitation to operate on him for the gastric lesion, because of his previous history of pulmonary difficulty. Hence he was treated conservatively. Since he was showing no response, he was readmitted six months later, in May, 1952, when a subtotal gastric resection was done. Pathological diagnosis was that of adenocarcinoma of the stomach without demonstrable metastases. He was making a satisfactory postoperative recovery, continuing, however, to experience troublesome chest pain. An intercostal nerve block was again performed under 2% procaine hydrochloride. The patient received by injection 18 cc. of procaine hydrochloride. A few minutes after the injection was completed he became acutely ill with severe dyspnea, orthopnea, choking, and cyanosis, and died suddenly in spite of adequate heroic therapeutic measures. Postmortem examination revealed the following conditions: There was no evidence of atelectasis in the lung. Lungs were grossly negative. The heart was negative. Some evidence of arteriosclerosis of the aorta was present. Liver, spleen, kidneys, and the rest of the organs were normal. Microscopic examination showed interstitial fibrosis in the lung. The walls of the pulmonary arterioles were thickened. In the portal triads were seen a moderate number of lymphocytes and a few eosinophils. There were occasional small focal zones of necrosis containing a few lymphocytes, one or two polymorphonuclear leukocytes, and a small amount of fibrin. Beneath the splenic capsule was found a thin band of diffuse eosinophilic infiltration. Very few eosinophils and polymorphonuclear leukocytes were found along the fibrous septums and in the follicles. In the kidney were found very few scattered hyalinized glomeruli and the tubules containing casts. In summary, this patient had several major operations because of malignancy. He had been exposed by injection on several prior occasions to procaine hydrochloride without any untoward reaction. The last injection of procaine hydrochloride was fatal within minutes after its administration. This would seem to be a death due to accelerated serum type of reaction (anaphylactic) to procaine hydrochloride. It is obvious that it could not be a toxic reaction, since the patient had not had any previous manifestations following the administration of procaine hydrochloride and the usual toxic level was not approached. It may well be that death was so sudden that the symptoms of pulmonary edema and right-sided heart failure had no chance to develop.

Case 3.—A woman, aged 29, was admitted to the Montefiore Hospital by ambulance as an emergency case. She had visited the dentist late in the afternoon on the day of admission for the purpose of tooth extraction. She was given, during the routine preparation for this procedure, an injection of procaine hydrochloride. Almost immediately afterwards and before the extraction, she became violently ill. Blood pressure was 70/60; pulse 180 or over. The patient became cold and clammy and received, while in the office of the dentist, oxygen and epinephrine; however, she showed no response to this therapy. Marked pulmonary edema developed. She was promptly sent to the hospital, where she arrived in a comatose condition. Her temperature was 101 F. She appeared in acute respiratory distress and was vomiting. The cough was productive of a pinkish sputum. She showed marked dyspnea, orthopnea, and cyanosis. Treatment included the administration of phenylephrine (neosynephrine®) hydrochloride, oxygen, ouabain, digitoxin, epinephrine, morphine, atropine, and cortisone. Patient was admitted at 6 p. m. A few hours after treatment was instituted she seemed to show some improvement. She began to breathe more easily and was less restless, and the chest became somewhat clearer; however, her condition became worse early the next morning. The blood pressure at this time was unobtainable, and the respirations became more and more labored. She was given oxygen by intermittent positive pressure; she also received liquid glucose and phenylephrine hydrochloride intravenously and 250 cc. of plasma and cortisone. An intratracheal airway was inserted, and artificial breathing was started. In spite of all these measures, the patient died at 11:30 a. m., or about 17 hours after she received the procaine hydrochloride injection. Postmortem examination revealed massive bilateral pulmonary edema with extreme congestion and hemorrhage throughout the alveoli

(fig. 2); early pneumonia; massive congestion of liver, spleen, and kidneys; exudate in the alveoli and the bronchi; and persistent thymus. The principal pathologic condition was in the lungs. The patient died of pulmonary edema. It should be stated that she had received an injection of procaine hydrochloride six months prior to this experience without showing any symptoms. This is also an instance of acute fatal accelerated serum reaction from procaine hydrochloride.

COMMENT

Reactions to local anesthetic drugs may be divided into toxic and allergic reactions. Many excellent papers are available on this phase of the subject. Gilman [6] and Sadove [7] cover thoroughly the stages, symptoms, and treatment of toxic reactions. It would appear that procaine hydrochloride is the least toxic and cocaine hydrochloride the most toxic of these drugs in the guinea pig [8]; however, we are concerned in this paper with allergic reactions, of which the three cases reported are good examples. Allergic reactions to drugs such as procaine hydrochloride may be divided as follows: (1) contact dermatitis, (2) serum sickness pattern, (3) anaphylactic or accelerated serum type of reaction, and (4) atopic reactions.

Contact dermatitits follows previous exposures to the drug. The diagnosis is made by patch testing with the suspected agent. Treatment consists largely of symptomatic measures and avoidance. Adler, Kesztyüs, and Simon [9] report dibucaine (nupercaine®) hydrochloride as a good substitute to be used in cases of contact dermatitis due to procaine hydrochloride. Serum sickness pattern may follow a primary injection of the drug. There is an incubation period of 2 to 12 days. The manifestations consist of urticaria, fever, arthralgia, and lymph node enlargement. The course is benign. Usually the symptoms are well controlled with antihistaminics, sympathomimetic drugs, corticotropin (ACTH), and cortisone. The accelerated type of serum reaction occurs following the second or subsequent injection of a drug. It is brought about by previous sensitization and is possibly mediated by anaphylactic or smooth muscle sensitizing antibodies. It is sudden in onset and of great severity; there may be shock and serious respiratory involvement. Fatal termination may occur. The postmortem findings in reports of fatalities resulting from local anesthetic drugs indicate capillary congestion, alveolar transudation, areas of emphysema that may alternate with those of atelectasis, hemorrhagic foci in various organs, visceral congestion, and dilatation of the right side of the heart.[10] The treatment of this type of reaction must be prompt and adequate. It includes supportive measures, sympathomimetic drugs intravenously, antihistaminics, oxygen, sedatives, digitalization, and cortisone or corticotropin. Since skin sensitizing antibodies do not mediate these reactions and since the antigen is a hapten, skin testing with the drug cannot be relied on as an index of the possible presence of such sensitivity.

Patients who are allergic by heredity (atopic) may be sensitive to procaine hydrochloride in such a way that immediately on exposure severe bronchial asthma, urticaria, or angioneurotic edema may develop. The suddenness of onset and extreme severity may prove fatal. This type of reaction is mediated by skin sensitizing antibodies. Treatment of these reactions includes the use of oxygen, sympathomimetic drugs, antihistaminics, and corticosteroids. Since drugs such as procaine hydrochloride are not of protein nature and since their antigenic property is due to their combination with body proteins, skin tests, as indicated above, are of no diagnostic value in this type of reaction. In view of this, it is suggested that other tests may be employed in instances suspected of such allergy. Thus, preliminary to the use of procaine hydrochloride, cocaine hydrochloride, and related drugs, one may apply them with an applicator intranasally. If the patient is severely sensitive untoward symptoms will develop within a few minutes. The drug may also be applied sublingually or intraconjunctivally as a test, although these methods of exposure are admittedly less desirable. These tests are simple and not time consuming. If the preliminary test is negative, then it may be assumed that further administration of the drug is relatively safe. Certainly it may be carried out easily in rhinological practice and in endoscopic and dental procedures; however, in instances where these tests are used, if the history indicates a suspicion of sensitivity, a drug whose chemical structure is unrelated to procaine hydrochloride should be employed.

SUMMARY

These three fatalities reemphasize the view taken by the original commission appointed by the American Medical Association to study the problem of fatalities due to local anesthetic drugs. In the first case, the fatality was probably due to acute bronchospasm resulting in asphyxia in an otherwise atopic person. The last two patients died of an immediate anaphylactic reaction (accelerated serum type of reaction) to procaine hydrochloride. The classification of allergic reactions to drugs such as procaine hydrochloride is presented. Preliminary tests with procaine hydrochloride are suggested in cases suspected of possible allergy.

1004 May Bldg. (Dr. Criep).

6. Gilman, S.: Treatment of Dangerous Reactions to Novocaine, New England J. Med. **219**: 841 (Nov. 24) 1938.

7. Sadove, M. S.; Wyant, G. M.; Gittelson, L. A., and Kretchmer, H. E.: Classification and Management of Reactions to Local Anesthetic Agents, J. A. M. A. **148**: 17 (Jan. 5) 1952.

8. Nevin, M., and Puterbaugh, P. G.: Conduction, Infiltration and General Anesthesia in Dentistry, ed. 5, Brooklyn, N. Y., Dental Items of Interest Publishing Company, Inc., 1949.

9. Adler, P.; Kesztyüs, L., and Simon, N.: The Problem of Group Specificity in Allergy to Local Anesthetics, J. Dent. Res. **29**: 713 (Dec.) 1950.

10. Waldbott, G. L.: Allergic Shock from Local and General Anesthetics, Anesth. & Analg. **14**: 199 (Sept.-Oct.) 1935.

Fluoridation of Public Water Supplies.—The results of animal experimentation show that the prolonged intake of quantities of fluoride too small to induce dental fluorosis does not give rise to any of the nondental manifestations of chronic intoxication by fluorides. Epidemiologic data and clinical and radiographic examinations of exposed industrial workers indicate that only when the fluoride content of a water supply exceeds 5 or 6 ppm will its prolonged usage give rise to detectable osseous changes and then only in the most susceptible persons. The evidence as a whole is consistent in offering assurance that bringing the fluoride concentration in communal water supplies to that known to be optimal for dental health is a prophylactic public health procedure which has an ample margin of safety.—Francis F. Heyroth, M.D., Toxicological Evidence for the Safety of the Fluoridation of Public Water Supplies, *American Journal of Public Health and the Nation's Health*, December, 1952.

GRANULOMAS DUE TO "ALPARENE No. 2" USED IN INJECTION TREATMENT OF HERNIA

Leo Kaplan, M.D., Los Angeles

Unfavorable tissue reactions to "alparene no. 2" used in the injection treatment of hernias in ambulatory patients have thus far not been reported. In recent months, my attention has been directed to nodular masses that developed at sites of injection of this substance in four patients. "Alparene no. 2," according to advertisements distributed, consists of calcium fluoride and silicon dioxide marketed in the form of a "near-colloidal" suspension containing 2.5 gm. of each per 30 cc. of suspension.[1] This suspension is intended to produce contracted cicatricial tissue wherever injected and utilizes the principle of the combined presence of fluoride (not in a free form) and finely divided silica particles.

REPORT OF CASES

CASE 1.—A 73-year-old white man was admitted to the hospital on March 5, 1951. For about 20 years previously, he had had gradually enlarging bilateral inguinal hernias. Because of the persistent discomfort, a series of 14 injections (14 cc.) of "alparene no. 2" was given the patient by a local physician in 1946 along a hernia on the right side. The patient experienced a burning sensation at the time of each injection. The injections failed to relieve the herniation. Three years after this injection therapy, the patient noted a gradually increasing lumpiness and roughness over the right hernia without subjective symptoms. On March 11, 1951, he was operated on, and nodular gray-white scars were found along the spermatic cord and in the wall of the hernial sac. A postherniorrhaphy examination in March, 1952, failed to show recurrence of the nodules. This patient had the inguinal nodules resected about five years after the initial injection. This represents the earliest lesion of the four described.

Pathological Report.—Microscopically, the central portion of each nodule was largely made up of a necrotic mass of fragmented tissue in which the shadows of fibrous strands and small caliber sclerotic vessels could be seen (fig. 1). In some foci of the latter, irregular zones of granular blue calcific deposits were observed. Within these zones was found a host of crystalline matter of varying shapes and sizes. There appeared to be two types of crystals (fig. 2). One was a slightly yellow, fragmented, jagged crystal that frequently occurred in sharply pointed spears and as somewhat chipped rectangles. The others were pale gray, and, though similarly varying in size and shape, they were more often plate-like and rectangular. These crystals varied in size from those barely visible with oil immersion to some as large as 70 μ in diameter; the greatest number varied from 15 to 30 μ. The crystals, although concentrated in the necrotic foci, were also found in the peripheral area of reaction. The peripheral reaction was characterized by large numbers of histiocytes and frequent multinucleated foreign body giant cells clustered in groups and separated by delicate or thick, deeply pink, collagen-containing septums (fig. 3). Most of these cells had phagocytized the plate-like crystals, whereas the jagged crystals were primarily observed in the necrotic zones. The cytoplasm of the histiocytes and giant cells was delicately granular and pale blue. Their nuclei were large, bearing a volume relationship of one to two up to one to four to the cytoplasm. Nests of these histiocytic granulomas had intruded between the ligamentous tissues that lined the hernial sac. No delineating capsule separated this reaction from the adjacent normal tissue. Only a few lymphocytes were scattered within the peripheral granulomatous foci.

CASE 2.—A 23-year-old white man was admitted to the hospital on March 6, 1950, for removal of subcutaneous nodules of the right inguinal region. In 1942, a right inguinal hernia had been repaired surgically, and in the same year two injections of "alparene no. 2" into the herniorrhaphy site had been given. A total of 1 cc. of "alparene" is said to have been used. There was intermittent local burning and pain radiating down into the penis and scrotum until 1948, when deep subcutaneous enlarged and fused nodules appeared exactly at the site of injection. In March, 1949, at this hospital, an attempt at resection of these nodules was unsuccessful. During the following year, several residual tiny nodules had enlarged,

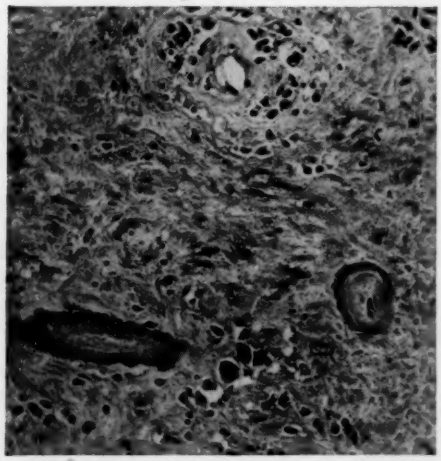

Fig. 1 (case 3).—Foci of infarction with necrotic sclerotized obliterated arterioles and shadows of fibrous connective tissue septums without specific marginal reaction; fused fibrous connective tissue and interstitial histiocytes are found marginally (× 140). This was found in all four patients.

and they became increasingly firm and painful. These were fixed to the deeper structures along the spermatic cord and extended beyond the external inguinal ring. On March 14, 1950, using local anesthesia, these nodules were dissected away from the adherent spermatic cord. Most of these stone-hard nodules were spheroid and ranged from 0.1 to 1 cm. in diameter. They were fused by gray-white scar tissue, but each was clearly encapsulated by a thin zone of gray-white tissue. Their cut surfaces gritted and were gray stippled with yellow. A postherniorrhaphy examination in March, 1952, failed to show recurrence of the nodules. This patient was treated surgically for the removal of the inguinal nodules seven years after the initial injection.

Pathological Report.—Microscopically, this reaction was largely similar to that described in case 1, with several variations. The necrotic foci were smaller and occasionally eccentrically located. The fibrous septums were denser, forming broad sheets and, occasionally, nodules of roughly concentric, somewhat laminated fibers of collagen (fig. 4). Scanty crystals were observed interstitially within the fibrous nodules.

CASE 3.—A 38-year-old white man was admitted to the hospital Sept. 6, 1949, for a mass in the left inguinal region. In 1935, bilateral inguinal hernias had been repaired surgically. In 1940, there was a small recurrence of the left inguinal hernia. This was treated in 1941 by a series of four injections

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Case 4 is published with the permission of Dr. George J. Hummer, pathologist at St. John's Hospital, Santa Monica, Calif. Mr. William L. Martinsen, Chief Photographer, General Medical and Surgical Hospital, Veterans Administration Center, Los Angeles, did the photomicrographs for this study. Dr. Donald V. Higgs, Research Associate, Department of Geology, University of California at Los Angeles, performed the crystallographic analyses of the crystals found in the tissue sections.

1. Silica-Silicosis, Dequin Physicians Products Co., Chicago, Ill.

(33.5 cc.) of "alparene no. 2." Within six months the patient noted fine subcutaneous granules in and about the injection site. These gradually became enlarged and fused. Many nodules reached walnut size and, though painless, were occasionally tender. They were stone-hard and sharply limited to the injection site. These were noted to be fixed to the deeper structures but not to skin. They were resected on Sept. 19, 1950. Most of the nodular masses were spheroid, varying from 1 to 6 cm. in diameter. Some were discrete, while others were confluent, but all were embedded in dense scar tissue. Their cut surface gritted. Crystalline material could be seen glittering under strong light within the dense white tissue of which each nodule was constructed. A postoperative examination in March, 1952, failed to reveal recurrence of the nodules. This patient, who had received the largest amount of "alparene," was surgically treated nine years after its injection.

Pathological Report.—The nodules themselves were larger than those in the other three cases being reported. Irregular necrotic zones similar to those in patients in cases 1 and 2 were observed in the central portions of each nodule; however, these zones were oval, round, and frequently scalloped by intruding scar tissue. These necrotic foci appeared to be "anemic" infarctions of preexisting scarified tissue (fig. 1). Irregular foci within the necrotic areas were often stippled with isolated blue calcereous granules or were solidly blue and

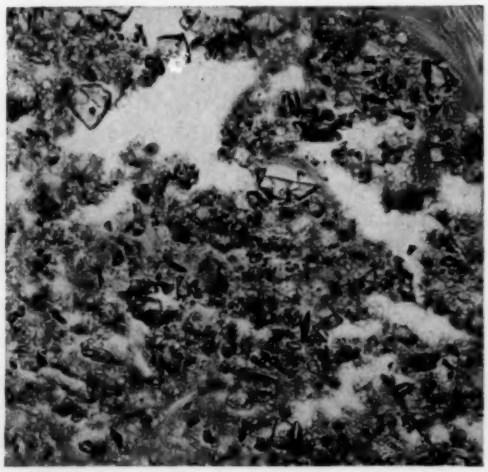

Fig. 2 (case 3).—Foci of necrosis containing crystals of calcium fluoride and silicon dioxide (× 140). This was found in patients in cases 1, 2, and 3.

granular, owing to fusion of these calcific deposits. The margins of these necrotic foci showed no particular reaction but fused indistinguishably with strands of fibrous connective tissue. Interstitially, histiocytes in large numbers and, occasionally, multinucleated giant cells, often containing the intracytoplasmic plate-like crystals, were found lining the numerous collagen strands (fig. 4). These histiocytes had either a pink or a pink-blue cytoplasm, with a large oval or round nucleus and a dark, large, hyperchromatic nucleolus. The strands of connective tissue were pink and either delicate or broad. They often coursed parallel to each other and frequently whorled to form various-sized, scantily nucleated nodules. Occasionally, thick-walled sclerotic arterioles were seen (fig. 4). There were no nests of histiocytes.

CASE 4.—A 65-year-old white man was admitted to the hospital on Jan. 4, 1950, complaining of bilateral inguinal herniation. Ten years before, about six injections of an unknown agent had been given bilaterally in an effort to obliterate the hernias. This had been unsuccessful. On Jan. 5, 1950, a bilateral herniorrhaphy was performed. The hernial sacs were thickened. Several nodules and dense adhesions of the sacs to the cords were found. These were resected. They were firm and were made of yellow-tan uniform tissue in which yellow dots were distinguishable. The patient later identified a bottle of "alparene no. 2" as identical to one from which material was taken for his hernial injections. A postherniorrhaphy examination in March, 1952, failed to show recurrence of the nodules. The longest interval between injection and surgical removal of the nodules (10 years) occurred in this patient.

Pathological Report.—The nodules that were observed were small and not demarcated from the adjacent tissues. No necrotic foci were encountered. Broad nests of histiocytes and giant cells, similar to those described in cases 1 and 2, were

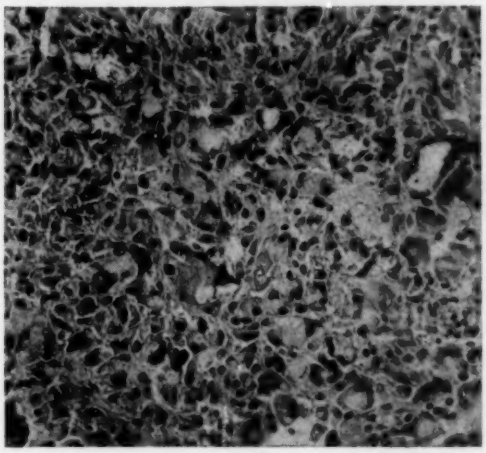

Fig. 3 (case 2).—Zones of mononuclear and multinuclear histiocytes, many showing intracytoplasmic crystals of calcium fluoride and silicon dioxide (× 140). This was found in patients in cases 1, 2, and 4.

seen, although the multinucleated giant cells were more numerous (fig. 3). Intracytoplasmic plate-like crystals were prominent. These nests were separated by irregular zones and septums of collagenized fibrous connective tissue.

All the pathological observations were made from slides prepared from paraffin blocks and stained with hematoxylin and eosin. Elastica stains revealed that where the granulomas spread through the fascial planes of this region, fragments of elastica were strewn about in the resulting scar tissue. The deposit of scar tissue appeared to be without any associated deposit of elastica. Reticulum stains revealed a heavy deposit of delicate reticular fibers in the interstitial spaces of the fibrocyte-rich connective tissue and the absence of reticulum in

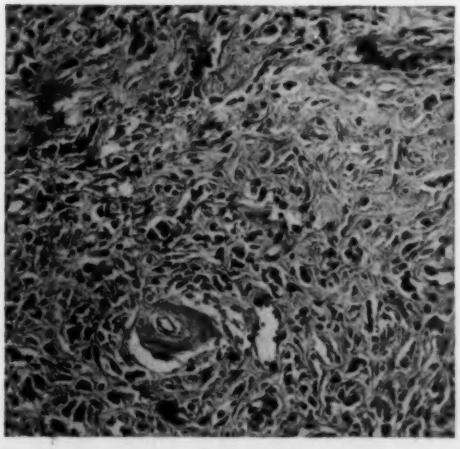

Fig. 4 (case 3).—Strands of fibrous connective tissue with interstitial mononuclear and multinucleated histiocytes and sclerotic partially obliterated arteriole (× 140). This was found in all four patients.

the necrotic zones and in the completely hyalinized nodules of collagen. Masson stains revealed that the strands, septums, and nodules of connective tissue were blue-staining collagen. It also showed that the necrotic areas were scar-containing and collagen-rich and, there-

fore, represented foci of infarction. The tissue sections were submitted for crystallographic study. Two types of crystals were identified: a fluorite (calcium fluorite) and a quartz (silicon dioxide). This identification was made independently of the knowledge of the chemical constituents of the injected material.

COMMENT

The reaction of tissue to silaceous material appeared to be primarily fibroplastic, with little or no inflammatory response. Investigations directed to determine the factors responsible for this type of tissue response revealed early that the concentration of silica and its particle size determined the development of the nodular fibrosis characteristic of this material.[2] Evans,[3] in 1948, and Evans and Zeit,[4] in 1949, demonstrated that the fibroplastic effect was due to the fact that silicon dioxide (quartz) fell into a class of asymmetrical crystalline materials (piezoelectric). The term piezoelectric is defined as that property of asymmetric crystals that causes them to develop electrical charges when compressed or extended in particular directions. Mechanical forces are at play in the groin continuously; these are the result of pulsant circulation, respiration, cough, strain, and mechanical pressure from such things as constricting garments and trusses. Each of these forces may exert a sufficient mechanical force on the crystals to create electrical charges within them. This has been shown by these investigators to be responsible for the induction of the fibrous response to these crystals. These authors postulated that crystalline materials are fibroplastic if they are relatively insoluble in body fluids, are in the asymmetrical (piezoelectric) crystal group, and are electrically nonconductive, of a proper particle size, and in sufficient particle concentration.

In the four cases described, the patients were shown historically and physically to have had "alparene no. 2" used in the injection treatment of their hernias. The amount known to have been injected varied from 14 to 33.5 cc. Three of the four patients experienced immediate symptoms, such as burning, localized pain, and tenderness. Clinical awareness of nodules at the site of injection was observed earliest in the patient in case 3, who received the largest amount of material. This occurred six months after the initial injection. The patient in case 2, who probably received the least amount of "alparene no. 2," became aware of localized inguinal nodules five years after injection. This represented the longest interval after initial injection. Three of the four patients observed progressive and continuous increase in nodular size.

The tissue reactions observed seemed to follow the pattern described for silicon particles in tissue. The capacity of silicon to cause a fibrocytic tissue reaction is not its sole effect. It has been shown that it may also induce a necrotizing effect when present in high concentration.[5] The presence of foci of necrosis and infarction appears to imply that these crystals act as a constant irritant, inducing progressive scarification not only of the interstitial tissue but also of its blood vessels (fig. 4). The onset of infarction with the subsequent release of crystals establishes an irreversible cycle of productive scar and histiocytic granuloma formation. The mechanism of this continuous reaction may well be the piezoelectric phenomenon described by Evans and Zeit. This cyclic phenomenon is consistent with the observation that three of the four patients reported progressive enlargement of the nodules and foci of necrosis. That this series of observations are of great interest clinically is borne out by the fact that two of the four patients sought surgical relief primarily for the nodular scarifying process that complicated the use of "alparene no. 2."

The addition of calcium fluoride to silicon dioxide in the product "alparene no. 2" was based on a theoretical statement by Drs. McNally and Bergman, in 1935,[6] in which they postulated, "The damage that is done to the lung, we believe, is due to the action of the fluorides in the blood attaching the silicon molecule and the soluble silicon tetrafluoride causing fibrotic changes." No other reference to the additive effect of fluorides on the tissue response of silicon dioxide itself could be found in the available literature.

SUMMARY

Four cases in which granulomas resulted from the use of "alparene no. 2" in the injection treatment of inguinal hernia are reported. Two patients sought surgical relief primarily for the nodular scarifying process that complicated the injection treatment. Three reported progressive, continuous increase in the number and size of the complicating nodules. The number and size of the nodules and the time of their appearance seemed to be related to the amount of material injected. Localized nodular tissue response to "alparene no. 2" is described grossly and microscopically. The significance of foci of infarction in the nodules produced and the piezoelectric effect of the asymmetrical quartz crystals are discussed.

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4. Evans, S. M., and Zeit, W.: Tissue Responses to Physical Forces: II. Response of Connective Tissue to Piezoelectrically Active Crystals, J. Lab. & Clin. Med. **34**: 592-609, 1949; III. Ability of Galvanic Current Flow to Stimulate Fibrogenesis, ibid. **34**: 610-615, 1949.

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6. McNally, W. D., and Bergman, W. L.: Silicosis, Indust. Med. **4**: 61-65, 1935.

Loss of Hereditary Factors.—When we consider that man has probably 20,000 or more gene loci where mutations can occur, it is evident that mutation must be an important factor in the heredity of human populations. With such high mutation rates as occur in man, harmful mutations will rapidly accumulate in our populations unless selection is effective in eliminating them promptly. There is a constant random loss of hereditary factors from every population through the failure of certain individuals to leave offspring, and from other causes. Should a particular gene be carried only by a single individual, for instance, the failure of this individual to produce offspring will mean the permanent loss of that gene. Which particular genes will be lost in this manner is usually a matter of chance. Valuable genes are just as likely to be lost by chance as harmful ones. A rare hereditary factor . . . will be easily lost, and if once lost it can only reappear in the population by a new mutation or by interchange with some other population. The chance loss of genes must be of frequent occurrence in small populations, but in large populations it is probably negligible, except for very rare genes. . . .—L. R. Dice, M.D., Heredity and Population Betterment, *Scientific Monthly*, November, 1952.

EFFECT OF POSITION CHANGES OF THE LOWER EXTREMITIES DURING VASOMOTOR BLOCK

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and
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In 1826 Piorry wrote "It is in consequence of gravity that when the arms are held down the veins swell and the capillaries are filled, and that the reverse occurs when the veins are held up, that varicoceles enlarge on standing up and diminish in a horizontal position, and that the head and face redden when held down"; at this time Piorry observed that "In cerebral syncope the heart continues to beat but the beats have not force enough to overcome the resistance which is given by gravity." Edholm pointed out recently that postural pooling of blood in the unanesthetized cat in the feet-down position occurs primarily in the liver, but that in man postural pooling of blood in the lower extremities assumes a far greater significance because of the greater relative size of man's legs. That the magnitude of circulatory changes following position changes was dependent on the vasomotor state was stressed by Leonard Hill as early as 1895. This author noted that "When the power of compensation is damaged by paralysis of the splanchnic vasoconstrictors induced by severe operative procedures or by injuries to the spinal cord, by asphyxia, or by some poison such as chloroform or curare, then the influence of gravity becomes of vital importance." The importance of peripheral vasomotor paralysis on postural circulatory changes was demonstrated later by Graham and Douglas,[1] who studied the hypotensive state experimentally by bleeding dogs and cats. The assumption in these animals of a head-down position effected no change in the blood pressure or the cardiac output unless high spinal anesthesia was administered. The authors explained the significant rise of both blood pressure and cardiac output in the head-down position following spinal anesthesia by stressing that stagnant pooled blood from peripheral vessels was mobilized. In man clinical states that affect the vasomotor capacity of the lower extremities increase enormously the importance of postural shifts. In this study we shall consider the effects of postural alterations of the lower extremities during the state of vasomotor paralysis produced by (1) certain anesthetic agents and (2) autonomic blocking drugs.

In cases of vasomotor paralysis of the lower extremities produced by spinal block, anesthetists utilize postural changes advantageously. Walton and Netter [2] state that during low spinal anesthesia the "most effective initial procedure to increase blood pressure is to raise the patient's legs to the vertical position," and they note that "Hingson and Southworth [3] have shown by actual measure that the vascular bed of the lower extremities is expanded by an additional 600 to 800 cc. under regional block." Andros and Priddle [4] found that 25% of 911 patients subjected to low spinal anesthesia evidenced a fall in systolic blood pressure greater than 20 mm. of mercury, and they found that the patients in whom hypotension was produced rarely needed ephedrine but responded adequately to "simpler methods such as elevation of the feet." At times a marked drop in blood pressure during spinal anesthesia may be desired as in cases using the total spinal hypotensive technique advocated by Griffiths and Gillies. Effective hypotension can be achieved in these cases only by depression of the lower extremities.[5] The beneficial utilization of elevation or depression of the lower extremities during spinal anesthesia is thus well established, but it would be an error not to stress the dangers of such position shifts if they are produced or resolved suddenly and without continuous observation. It was recently brought forcefully to our attention that under spinal anesthesia the lithotomy position may produce major circulatory shifts and that it must therefore be regarded with as much caution as the more obvious motion of the lower extremity with the entire leg extended.

Described in this report are three cases that we observed recently and that demonstrate the effects on blood pressure of sudden shifts to or from the lithotomy position during administration of spinal anesthesia. The last case illustrates the drastic results that such blood pressure changes may produce.

REPORT OF CASES

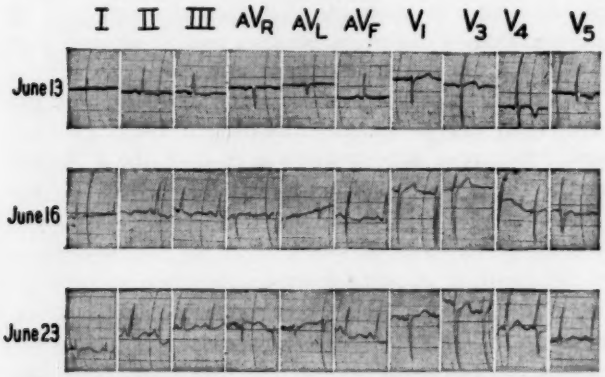
CASE 1.—A 79-year-old man entered the hospital with the chief complaint of inability to void. For the past three to four years he had exertional dyspnea, mild orthopnea, intermittent ankle edema, and angina of effort, characterized by precordial pain radiating to the left shoulder and down the arm, promptly relieved by glyceryl trinitrate (nitroglycerin). He had been treated elsewhere with digitalis and occasional injections of mercurial diuretics, and following his most recent injection of a mercurial diuretic acute urinary retention developed. Physical examination revealed a blood pressure of 120/68 mm. Hg, dulness of both lower lung fields, and rales over the lower one-third posteriorly. The heart was enlarged to the left and right, and the pulse was soft with an irregular rhythm. The liver was palpable 5 cm. below the costal margin and was firm but nontender. The prostate was enlarged to three to four times its normal size and was hard. A diagnosis was made of (1) carcinoma of the prostate and (2) arteriosclerotic heart disease with congestive failure and auricular fibrillation. After receiving bladder drainage and intensified medical treatment the patient underwent a perineal prostatectomy under low spinal

From the Heart Station of the Genesee Hospital (Dr. Soffer) and the Department of Anesthesia, University of Rochester School of Medicine and Dentistry, and Strong Memorial Hospital (Dr. Sweet).

1. Graham, A. J. P., and Douglas, D. M.: Effect of the Head-Down Position on the Circulation in Hypotensive States, Lancet **2**: 941, 1949.
2. Walton, J. H., and Netter, F. H., in Control of Pain with Saddle Block and Higher Spinal Anesthesia, Walton, J. H., editor, Summitt, N. J., Ciba Pharmaceutical Products, Inc., 1948, p. 24.
3. Conduction Anesthesia: Clinical Studies of George P. Pitkin, Southworth, J. L., and Hingson, R. A., editors, Philadelphia, J. B. Lippincott Company, 1946.
4. Andros, G. J., and Priddle, H. D.: Saddle-Block Anesthesia at Chicago Lying-In Hospital, Anesth. & Analg. **29**: 330, 1950.
5. Enderby, G. E. H.: Controlled Circulation with Hypotensive Drugs and Posture to Reduce Bleeding in Surgery: Preliminary Results with Pentamethonium Iodide, Lancet **1**: 1145, 1950.

anesthesia. On arrival at the operating room his blood pressure was 110/60 mm. Hg; it remained at approximately this level for 30 minutes after the spinal anesthetic was administered. At the completion of the surgery, the patient was taken down from the exaggerated lithotomy position and returned to bed. The patient's blood pressure promptly dropped to 80/60 mm. Hg; the pulse was recorded as being of fair quality only, with noticeable cyanosis of the nail beds. Both legs were then elevated to 90 degrees, and the blood pressure rose to 110/64 mm. Hg; lowering the legs again resulted in a fall of blood pressure to 86/60 mm. Hg. Three hours after the administration of the spinal anesthetic the blood pressure returned to a normal of 106/70 mm. Hg with the patient lying flat in bed.

CASE 2.—A 49-year-old man entered the hospital with the chief complaint of "kidney trouble." For 20 years he had intermittent attacks of low back pain, and 10 years previously he had received morphine for relief of a severe attack that was diagnosed as kidney stones, although no roentgenograms were taken. Six weeks prior to admission a steady dull low backache developed, which was accompanied by burning on urination and frequency of urination. For three weeks the patient noted bloody urine, and he had been told by his physician that pus was present. The past history was noncontributory. Physical examination revealed a middle-aged man in no distress. The blood pressure was 140/85 mm. Hg. The essential abnormal findings were limited to the right leg, which was smaller and shorter than the left leg as a result of childhood poliomyelitis, and the prostate gland was enlarged two to three times its normal size and was firm. Cystoscopy and retrograde pyelograms were carried out, and a diagnosis of benign prostatic hypertrophy and prostatitis was made. About three weeks after the original admission acute retention developed and the patient was brought back for a transurethral resection of the prostate. Preoperative medication of meperidine (demerol®) hydrochloride, 0.1 gm., and atropine, 0.4 mg., was given, and a low spinal anesthetic was administered. A level of sensory anesthesia to the ninth thoracic dermatome was obtained. Within five minutes after the anesthetic was administered the blood pressure dropped from 128/90 to 90/76 mm. Hg. It was noted that the pressure could be returned to normal by elevating both legs to 90 degrees. On dropping the legs to the lower level the blood pressure would drop again. This was repeated several times with the same results. Placing the legs in stirrups resulted in maintaining the blood pressure at normal levels throughout the surgical procedure.



Electrocardiogram in case 3. The acute myocardial injury present on June 13 shows improvement in the succeeding tracings. The sloping T waves and the prolonged QT_c in the tracing taken on June 23 is consistent with the diagnosis of hypopotassemia.

CASE 3.—A 66-year-old man in excellent health entered Genesee Hospital June 6, 1951, because of abdominal distress. A friable bleeding rectal mass was found, and a diagnosis of rectal carcinoma was confirmed by histological studies. Pertinent points of interest in the history included minimal dyspnea on exertion of a few years' duration. An electrocardiogram taken a few months previously had revealed no abnormalities. Physical examination revealed a blood pressure level of 170/75 mm. Hg. A few basilar rales were present bilaterally. The pulse was 92. No peripheral vascular pathology was evident. The preoperative laboratory work disclosed a white blood cell count of 11,800 with a normal differential. Hemoglobin was 14.2 gm. per 100 cc. of blood. The urine evidenced a 1 plus sugar, but the fasting blood sugar was 78 mg. per 100 ml. The nonprotein nitrogen was 42 mg. per 100 ml. of blood, and the total proteins and the albumin-globulin ratio were normal. The stool guaiac was 3 plus. A chest roentgenogram showed normal lung fields and a normal heart shadow.

On June 13 an abdominal perineal resection was performed. Preoperative medication consisted of pentobarbital (nembutal®) sodium 1½ grains (90 mg.), morphine ¼ grain (15 mg.), and scopolamine hydrobromide 1/200 grain (0.3 mg.), all given at 6 a. m. Continuous spinal anesthesia was used. During surgery the medicaments administered included 10 mg. of tetracaine (pontocaine®) hydrochloride, 25 mg. of procaine hydrochloride (2.5 cc. in 10% dextrose), 5 mg. of methoxamine (vasoxyl®) hydrochloride intramuscularly initially, 1 gm. of thiopental sodium (pentothal®), 500 cc. of blood, and 3 mg. of methoxamine hydrochloride intramuscularly at 8 a. m., 8:30 a. m., 8:40 a. m., 9:50 a. m., and 10 a. m.

During surgery the blood pressure stayed constantly at 120/60 mm. Hg after an initial drop from 130/64. The positions used were mild Trendelenberg and then the lithotomy position. During the time that the patient was in mild Trendelenberg position the anesthetic level rose transiently to dorsal four. The lithotomy position was maintained for the last three-quarters of an hour of surgery, and in the process of preparing the patient for transfer to the portable stretcher both legs were lowered approximately simultaneously. Within one or two minutes the patient's eyes rolled up and a marked bradycardia was noted. An electrocardiogram taken at this time was interpreted as showing acute ischemia. The blood pressure at this time was unobtainable. Intensive therapy was begun, and the blood pressure slowly rose to 105/70 mm. Hg. Glucose, 2,500 cc., was given intravenously in the next 24 hours. During the three days the patient became clinically better, and the blood pressure gradually increased to 130/80 mm. Hg. The electrocardiograms showed continued improvement of the T waves (see figure). On June 16 abdominal distention was noted and a paralytic ileus was diagnosed. Wangensteen suction was instituted, but on June 23 the patient's clinical condition became considerably worse. The systolic blood pressure at this time was 60 mm. of mercury. Some disorientation was present. It was felt that an electrolyte imbalance existed secondary to the patient's emesis and the paralytic ileus. At this time the serum carbon dioxide combining power was 85 vol. per 100 ml. The serum chloride as sodium chloride was 372 mg. per 100 ml., or 64 mEq. per liter as chloride. Serum sodium was 130 mEq. per liter, and the serum potassium was 2.9 mEq. per liter. The blood urea nitrogen was 102 mg. per 100 ml. The electrocardiogram showed a QT_c that was consistent with the diagnosis of hypopotassemia (see figure). Severe oliguria was present, and at this time potassium chloride was given daily as was cortisone and albumin. The electrolyte imbalance improved, but the hypotension persisted and the patient grew clinically worse. Pulmonary edema occurred on June 24, and shorty thereafter the patient died on the 18th day of hospitalization. The autopsy showed confluent bronchopneumonia with atelectasis and marked bilateral pulmonary congestion and edema. The heart weighed 370 gm. The coronary vessels were slightly diminished in caliber, and present on their inner walls were some small firm plaques. On histological section the myocardium appeared to be normal. The liver showed metastatic carcinoma with marked necrosis.

CHANGES IN BLOOD PRESSURE

Under spinal anesthesia the patient in case 3 was put in the lithotomy position for a period of shortly under one hour. His clinical condition remained excellent throughout surgery, but following the completion of surgery (and when he was to be moved to the cot) his legs were rapidly lowered to the horizontal position. In less than two minutes after this position shift the patient's blood pressure was unobtainable and his condition became critical. His rapidly changing electrocardio-

grams and the subsequent development of myocardial failure indicated that irreversible cardiac damage had occurred during this interval. The eyeball movements suggested central nervous system ischemia, either secondary to the myocardial collapse or possibly as the earlier (though reversible) lesion, but in any event sudden pooling of blood in the rapidly lowered extremities must be assumed to be the primary basis for the patient's critical state and fatal outcome. Comparably profound blood pressure changes may be produced during high spinal anesthesia after the assumption of a lateral or prone jack-knife position.[5]

In our discussion of blood pressure changes during anesthesia we have been primarily concerned with spinal anesthesia, but other anesthetic agents that affect the vasomotor state in varying degrees may produce circulatory alterations following similar postural changes. Chalafont has observed that patients subjected to thiopental sodium anesthesia showed a significant though transient drop in blood pressure when the legs were suddenly lowered from the lithotomy position.

Autonomic blocking drugs that inhibit vasomotor function of the extremities increase the importance of position shifts of the lower extremities, and, just as in the case of the anesthetic agents discussed, these postural changes may be either beneficial or detrimental. Enderby [5] has used pentamethonium iodide, tetraethylammonium chloride, and hexamethonium iodide in the anesthetized patient to produce hypotension, and he has noted that the effect of gravity is of major importance. He demonstrated clearly that "pooling of blood in the legs is the important factor in the production of hypotension," since the greatest vasodilatation occurs in the legs. As regards positioning of the lower extremities under these circumstances Enderby observed that "placing the patient in the lateral or prone jack-knife position leads to a profound fall in blood pressure," and also that a foot-down tilt of 15-20 degrees or dropping one or both legs over the side of the table with the patient supine gives a moderate reduction in blood pressure. Conversely raising the lower extremities will reverse an alarming fall in blood pressure. Tetraethylammonium bromide, a drug similar in action to those discussed, is used as a diagnostic test for pheochromocytoma. If a dangerous blood pressure rise occurs following its use in these instances a most gratifying and immediate drop in blood pressure may be obtained if the patient is placed in an upright position. An interesting postural circulatory reaction to a combination of autonomic drugs (one inhibitory and the other excitatory) has recently been described. Littman [6] and collaborators have shown that the distressing symptoms and the blood pressure rise following the injection of arterenol (norepinephrine) may be promptly alleviated by the assumption of a vertical position. This blood pressure drop in the upright position occurs only after simultaneous atropinization, and the authors demonstrated that the blood pressure drop is due in part to pooling of blood in the legs. It is pertinent, therefore, to consider the possible benefits of administering atropine to patients before or during surgery for pheochromocytoma. Should the pheochromocytoma prove to be one that secretes large amounts of arterenol and should an alarming blood pressure rise follow (a not uncommon occurrence even with the most careful manipulation) then the anesthetist would be enabled to use position shifts as a potent depressor agent.

COMMENT

Changes in the position of the lower extremities during vasomotor block are of particular importance (1) if the patient has a low cardiovascular reserve, (2) if the vasoregulatory mechanism of both the upper and the lower extremities is simultaneously impaired, and (3) if the position shift is made suddenly. Loman [7] and associates studied the effect of alterations in posture on the intra-arterial blood pressure in man, and they demonstrated that vascular compensatory measures that protect the cerebral circulation are less evident in subjects with arteriosclerosis. The hypertensive patient is also particularly susceptible to position shifts following interruption of vasomotor nerves. Roth [8] revealed that after extensive ventral rhizotomy (from seventh dorsal to second lumbar vertebrae inclusive) hypertensive patients placed in the upright position show a blood pressure drop that is twice as great as that which occurs in nonhypertensive patients who have been subjected to the same surgery. It is moreover an unfortunate fact that persons with low circulatory reserves not only show the most marked blood pressure changes following postural alterations during spinal anesthesia but also are the patients who are least able to tolerate sudden blood pressure changes. If, therefore, anesthesia utilizing the purposeful production of a hypotensive state (e. g., the method of Enderby [5]) is contemplated it would seem incumbent on the combined surgical and medical staffs to ascertain preoperatively whether occult as well as obvious cardiovascular pathological conditions exist. Exercise electrocardiograms may help in disclosing the patients for whom such an anesthetic method embraces inherent dangers. The importance of compensating vasoconstriction in the upper extremities in the maintenance of blood pressure during spinal anesthesia is stressed by Neumann [9] and associates. Milwidsky and de Vries [10] pointed out that during spinal anesthesia a significant fall in blood pressure appears only if anesthesia of dorsal segments four to eight occurs, i. e., if vasoconstriction of the upper extremities is interfered with. Rovenstine [11] and associates observed that syncope and a marked blood pressure fall rapidly resulted in patients who were subjected to spinal sensory anesthesia at a level of the fifth dorsal vertebra or higher, if these patients were tilted vertically. Vasomotor blocking drugs such as tetraethylammonium bromide produce ortho-

6. Littman, A.; Gunnar, R. M.; Grossman, M. I., and Casas, R.: Effect of Posture on Hypertension Induced by Sympathomimetic Amines in Man, Circulation 5: 437, 1952.

7. Loman, J.; Dameshek, W.; Myerson, A., and Goldman, D.: Effect of Alterations in Posture on the Intraarterial Blood Pressure in Man: Pressure on Carotid, Brachial and Femoral Arteries in Normal Subjects, Arch. Neurol. & Psychiat. 35: 1216, 1936.

8. Roth, G. M.: The Postural Effects on Blood Pressure Following Interruption of the Vasomotor Nerves of Man, Am. Heart J. 14: 87, 1937.

9. Neumann, C.; Foster, A. D., Jr., and Rovenstine, E. A.: The Importance of Compensating Vasoconstriction in Unanesthetized Areas in the Maintenance of Blood Pressure During Spinal Anesthesia, J. Clin. Investigation 24: 345, 1945.

10. Milwidsky, H., and de Vries, A.: Regulation of Blood Pressure During Spinal Anesthesia: Observations on Intramuscular Pressure and Skin Temperature, Anesthesiology 9: 258, 1948.

11. Rovenstine, E. A.; Papper, E. M., and Bradley, S. E.: Circulatory Adjustments During Spinal Anesthesia in Normal Man with Special Reference to the Autonomy of Arteriolar Tone, Anesthesiology 3: 421, 1942.

static hypotension by acting as a total autonomic block at the ganglionic level, thereby preventing the normal orthostatic autonomic responses. A variation of this same physiological mechanism may be a factor in the decreased vascular compensability for postural changes that is present following spinal anesthesia in the presence of hemorrhage or trauma, since in the latter states partial compensatory vasoconstriction of the upper extremities is probably already present.[9] Finally it must be stressed that the speed of postural alterations will directly affect the circulatory result, since a rapid shift in position decreases the ability of the compensatory vasomotor changes to protect cardiac and cerebral circulation.[12]

SUMMARY

Significant gravitational movement of blood in the legs occurs following minor position shifts during the state of vasomotor paralysis produced by certain autonomic blocking drugs, high or low spinal anesthesia, and to a lesser extent during thiopental sodium anesthesia. Depression or elevation of the lower extremities may therefore be utilized to lower or raise the subject's blood pressure as the situation demands. One must, however, be constantly aware of the drastic circulatory changes that may rapidly ensue if these position shifts are produced or resolved suddenly and without continuous observation. Three cases are described that illustrate the blood pressure changes that may occur during spinal anesthesia as a result of the assumption or resolution of the lithotomy position. The fatal outcome of case 3 was directly related to such a postural shift of the lower extremities.

Changes in the position of the lower extremities assume a particular importance if (1) the patient has a low cardiovascular reserve, (2) if the vasoregulatory mechanism of both the upper and lower extremities is simultaneously impaired, and (3) if the position shift is made suddenly. It is therefore suggested that hypotensive, or total spinal, anesthesia be attempted only after a thorough search for occult cardiovascular abnormalities. The value of position shifts of the lower extremities in the diagnosis and surgery of pheochromocytoma is discussed.

277 Alexander St. (Dr. Soffer).

12. Fleming, H. W., and Naffziger, H. C.: Physiology and Treatment of Transient Hemiplegia, J. A. M. A. 89: 1484 (Oct. 29) 1927.

KNEE DROPPING TEST

Robert Wartenberg, M.D., San Francisco

A middle-aged man had marked symptoms and signs of an expansive lesion in the left side of the brain. The severity of the affection warranted the assumption that pyramidal signs, i. e., signs of an upper motor neuron lesion, must be present on both right extremities. But such signs, though mild, were present only on the right upper extremity. On the right lower extremity none were found, though the patient had been examined repeatedly by all members of our staff. No one could uncover the slightest evidence of impaired function of the right lower extremity. At the final check, the Babinski reflex, as before, was found absent, though many and varied techniques of elicitation had been tried. The final impression was: "right lower extremity: no pyramidal signs, no pathologic reflexes." After examination the patient was left alone, lying supine on the examining table, his legs drawn up. Later, to make himself more comfortable he extended his legs somewhat. Shortly afterwards it was found that the right knee was kept at a lower level than the left. The examiner then passively brought the right knee up to the level of the left knee. After a short time the right knee again slowly dropped. The patient was unaware of this dropping. Then he was asked to look at his knees, bend the right knee, and keep it at the same level as the left. He could do this, but after a few seconds the right heel slid slowly forward on the smooth surface of the table, and again the knee dropped. The experiment was repeated, and each time the right knee slowly dropped until the leg came to lie flat on the examining table. The left leg remained flexed and immobile. Operation performed the day after this examination revealed a tumor in the left hemisphere of the brain. It is evident that spontaneous dropping of the knee was, in this case, a manifestation of a mild, subclinical spastic paralysis of the lower extremity. This paralysis could not be detected by any other known sign, reflex, or test.

Thereafter all patients with fully developed, beginning or suspected hemiplegia were checked for this knee dropping test. The following technique finally has been adopted: The relaxed patient lies supine on a hard examining table. A soft sagging bed should not be used. The patient is asked to pull his legs up into a flexed position; or the examiner, placing his forearm under the patient's knees, lifts them into this position. The posterior angle of the knees should be slightly more than 45 degrees. To avoid directing the patient's attention to his legs, he should not be told of what the test consists. It is most important that friction between the patient's heels and the surface on which they rest be reduced to a minimum. The heels should not rest on a soft mattress nor a sheet, but on a hard, smooth surface. A wooden board, a hard cardboard, or a metal plate are appropriate. If a large cardboard or smooth metal plate is not available, each heel may be placed on a small, separate piece of cardboard that can slide easily on the smooth hard surface of the examining table. The contact between the heel and the cardboard is so firm that the heel will push the cardboard along the table surface as the knee drops. We use a metal plate. On this the heels are placed so that they may slide easily. To facilitate this, talcum powder is spread on the metal plate and rubbed on the patient's heels. Once the patient's flexed legs rest with heels on the powdered surface of the plate, he is given no further instructions. The examiner simply watches for any change

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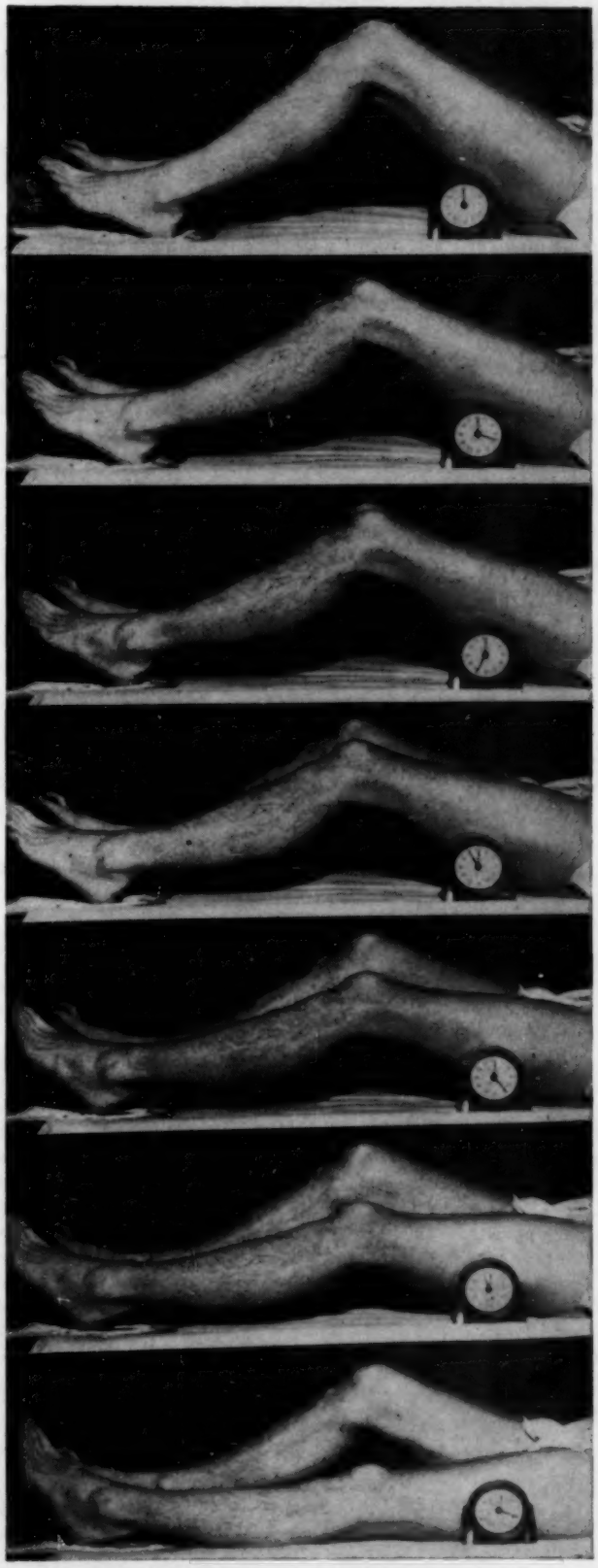
in the horizontal level of a knee. On the side of a pyramidal lesion the knee drops. Sometimes the patient tries to correct this but is unsuccessful in the long run. The dropping continues evenly and steadily until the leg comes to lie flat on the surface of the table (see figure). If asked actively to counteract the knee dropping, the patient may again and again lift the dropping knee. But he does so with varying success, depending on the severity of the pyramidal lesion. The final drop is retarded, but it takes place eventually.

The degree of flexion, the posterior angle at which the knees are originally kept, is all important. The more obtuse this posterior angle, the more easily dropping occurs with a pyramidal lesion. If the legs are drawn up maximally, no dropping occurs even in cases of a severe pyramidal lesion. The reason for this is that the vertical or almost vertical position of the lower legs and the resulting friction between the whole surface of the sole and the surface of the table successfully counterbalance the action of the muscles that tend to stretch the knee: the knee retains its position. Some initial extension of the leg facilitates the knee dropping. In other words, the severer the pyramidal lesion, the more acute the angle at which the knee begins to drop. Mild pyramidal lesions show a positive knee dropping test only when the leg is but slightly flexed. Therefore, to make the test more sensitive in order to uncover the slightest degree of a pyramidal lesion the posterior angle of the knee is passively made more and more obtuse. For this purpose the examiner slowly and gently pulls away the metal plate while the patient's heels remain resting on it. This straightens the knees somewhat and greatly facilitates the dropping. When the leg is held only slightly flexed and the pyramidal lesion is mild, dropping does not begin immediately but is delayed, or so to speak "hesitant." The milder the pyramidal lesion, the longer the latency period of dropping. The speed of dropping is also proportionate to the severity of the lesion. That the latency period and the speed of dropping depend on the severity of the lesion is clearly seen in bilateral spastic paralysis. When the two sides are compared the side with milder paralysis begins to drop later and proceeds more slowly. The severity of the spastic paralysis may also be judged grossly by the sound the leg makes as it strikes the surface of the examining table. The severer the hemiplegia, the sharper and louder is this sound. In mild cases it is somewhat dull and prolonged.

The patient may be asked to make the maximal effort to keep the knee up. The milder the hemiplegia, the more successful his attempt. In severe cases it is often impossible for him to keep the knee up, even temporarily. Usually he is not able actively to lift his knee, but if he can, or if the knee is lifted passively, it drops immediately like dead weight. Thus, in severe cases this test is useless. In fact, no test is needed. The diagnosis is made at a glance. In mild or in incipient cases of spastic paralysis of the leg, however, the diagnosis may be extremely difficult or impossible. And this despite the fact that there are innumerable proved and generally accepted signs of hemiplegia.

The value of the knee dropping test lies in the fact that it has proved useful in uncovering cases of hemiplegia at their earliest inception. It has the following advantages: 1. It is easy to perform. 2. It does not inconvenience the patient. 3. It does not require the patient's collaboration. 4. Results of the test are easily interpreted; they are plainly visible, unmistakable, and unequivocal. 5. It uncovers the slightest defect in the pyramidal tract



Test for left-sided hemiplegia. The clock indicates seconds.

very early. 6. It has certain quantitative properties. 7. In a mild pyramidal lesion the dropping occurs so slowly, evenly, and regularly, that it cannot be imitated.

In order that the test may uncover the slightest pyramidal lesion, it must be made sensitive to the utmost degree. The following special techniques should be used: 1. Dropping is tested while the leg is held flexed at various angles. If, at a certain angle, the knee does not drop, it should be extended slightly and the test repeated. 2. The friction between the heels and the surface on which they rest must be reduced to a minimum. This surface should be hard, smooth, and slippery. Powder put on the surface and on the patient's heels contributes to this end. 3. Since the dropping does not start immediately, the examiner must exercise some patience. 4. It is advisable to repeat the test, whether it is positive or negative; only when the dropping is found constantly on repeated examinations should the test be considered positive. Using these technical modalities the test has been tried on patients with spastic paralysis of varying degrees and on normal control cases. Based on these experiences the following statement is warranted: If on this test, carried out as outlined above, the knee does not drop, spastic paralysis can be excluded. No attempt has been made in mass examinations to compare the value of this test with that of many other pyramidal signs. Any such study could have but limited value. The clinician who concentrates on a single test of special interest is apt to deceive himself. The many modifications of the Babinski reflex were invariably lauded by their initiators as superior to the original Babinski reflex. Experience and history have disagreed with them. What really counts is not how much better one test is than another but whether a given test is reliable. The knee dropping test certainly is. The following three cases show that this test may furnish the earliest or most outstanding pyramidal sign.

Case 1.—On hospital examination, a 12-year-old girl who had just suffered a convulsion was found to have normal and equal reflexes and no pathological reflexes. An office examination two weeks later revealed choked disks but equal reflexes. Six weeks later a neurologist found normal reflexes, no pathological reflexes, no sensory changes, and a normal gait. Immediately on admission to this hospital and during six days of observation, signs of increased intracranial pressure and of mild spastic paralysis of the right face and right arm were found. Nothing, however, was found that would point to involvement of the right lower extremity, except for a history of dysesthesias in the right leg. The knee dropping test was strongly positive on the right. After an electroencephalogram, arteriogram, and pneumogram had been made, the diagnosis was left-sided temporal lobe tumor. On operation, a diffuse infiltrating tumor (astrocytoma) was found in the left temporal lobe. It extended posteriorly and medially to involve the adjacent portion of the frontal and parietal lobe. The tumor could only be partially removed.

If one takes even the most critical view of this case, it seems incontestable that it was fully warranted to assume that the pyramidal tract leading to the right lower extremity was affected by the left temporal lobe tumor and that the knee dropping test provided the only sign of such involvement.

Case 2.—A 42-year-old man had marked bilateral choked disks. He did not complain about weakness in the lower extremities. Gait and strength of the legs, particularly of the dorsiflexors of the feet, were normal. He had, however, mild pyramidal signs on the right side, an increase of the deep muscle reflexes, slightly positive leg extension test (so-called leg sign of Barré), and slightly positive tibialis test (Strümpell). But there was no Babinski reflex on the right side, not even when any of the numerous modifications of the technique of its elicitation was applied. The knee dropping test was markedly positive on the right and negative on the left. After cerebral angiography and ventriculography the diagnosis was subdural hematoma, left parietal region. After operative removal of the hematoma the patient made a good recovery. On examination 13 days postoperatively the knee dropping test on the right was repeatedly found negative.

Case 3.—A 26-year-old woman had a history, symptoms, and signs highly suggestive of multiple sclerosis. She complained of weakness and dysesthesias in the left leg. There was no Babinski reflex on either side. The left superficial abdominal reflexes were either absent, or easily exhaustible on repeated examinations. On the right, these reflexes were normal. There was a definitely positive knee dropping test on the left.

Here, in a patient where there was a high suspicion of involvement of the left pyramidal tract, a positive knee dropping test on the left seems to have been the most outstanding sign of this involvement. The physiological mechanism underlying the knee dropping test is soundly based, clear, and can hardly be considered controversial. Particularly in early cases of spastic paralysis there is a tendency to keep the lower extremity extended at the hip and knee. Hemiplegia or paraplegia in flexion occur very rarely and only in long-standing cases. In common cases of spastic paralysis in extension, when the knee is passively flexed, the patient's legs return to the position of extension again and again. Extension occurs because in pyramidal lesions paralysis does not affect all leg muscles in equal degree. The paralysis is greater in the flexors of the hip and knee than in the extensors. Spasticity is greater in the extensors of the hip and knee than in their flexors. The knee dropping test is based on this relative weakness of the flexors in comparison to that of the extensors of the hip and knee. In spastic paralysis these extensors suffer less than the flexors. They predominate and keep the lower extremity extended at hip and knee. They tend to bring it back into this position when the extremity is actively or passively flexed. This is the physiological basis for the knee dropping test.

The knee dropping test is closely related to what has been called maneuvers as described by Mingazzini [1] and by Barré.[2] In the test of Mingazzini, called "a little sign of organic paresis," the patient lying supine is asked to bend both hips and knees at right angles to keep them in the air in this position. A normal person can do this for a considerable length of time. On the side of the pyramidal lesion, the thigh and sometimes the lower leg drop slowly. In what Barré called maneuver of the leg the patient lying prone is asked to bend his legs and to hold them vertically at a right angle to the thigh. On the side of the pyramidal lesion the leg drops. In the test of Barré there is a single movement based on the weakness of the flexors of the knee. In that of Mingazzini there are two independent movements: (1) dropping of the thigh from the hip, based on the weakness of the flexors of the hip,

1. Mingazzini, G.: Sur quelques "petits signes" des parésies organiques: note clinique, Rev. neurol. **21**: 469 (Oct. 30) 1913.
2. Barré, J.-A.: La manoeuvre de la jambe; nouveau signe objectif des paraiysies ou parésies dues aux perturbations du faisceau pyramidal, Presse méd. **27**: 793 (Dec. 24) 1919.

and (2) dropping of the lower leg, based on the weakness of the extensors of the knee. A pyramidal sign is more sensitive when based on the weakness of the flexors than when based on the weakness of the extensors of the knee. Besides this, in the knee dropping test weakness of the flexors of the knee and weakness of the flexors of the hip combine to produce a single movement. It is obvious therefore that, in comparison with Mingazzini's and Barré's maneuvers, the knee dropping test is a more sensitive means of detecting a pyramidal lesion.

COUNCIL ON FOODS AND NUTRITION

ACCEPTED FOODS

The following products have been accepted as conforming to the rules of the Council.

JAMES R. WILSON, M.D., *Secretary.*

Richmond-Chase Company, San Jose, Calif.

Diet-Delight Brand Dietetic Pack Tomatoes.

Ingredients: Tomatoes without added sugar or salt.

Analysis (submitted by manufacturer).—Total solids 5.5%, moisture 94.5%, ash 0.5%, fat 0.1%, protein 0.9%, available carbohydrates (total sugar as invert) 2.8%, carbohydrates by difference 3.7%, crude fiber 0.3%, sodium 6.5 mg./100 gm., vitamin C 17.5 mg./100 ml. or more when packed.

Calories.—0.16 per gram; 4.5 per ounce.

Use.—For use in calorie-restricted and sodium-restricted diets.

Diet-Delight Brand Dietetic Pack Tomato Juice.

Ingredients: Tomato juice without added sugar or salt.

Analysis (submitted by manufacturer).—Total solids 5.7%, moisture 94.3%, ash 0.4%, fat 0.1%, protein 0.5%, available carbohydrates (total sugar as invert) 3.7%, carbohydrates by difference 4.4%, crude fiber 0.3%, sodium 7.0 mg. per 100 gm., vitamin C 17.5 mg./100 ml. or more when packed.

Calories.—0.17 per gram; 4.8 per ounce.

Use.—For use in calorie-restricted and sodium-restricted diets.

The Chicago Dietetic Supply House, Chicago.

Cellu Brand Dietetic Pack Salmon.

Ingredients: Raw meat of salmon devoid of skin and backbone.

Analysis (submitted by manufacturer).—Total solids 28.85%, moisture 71.15%, ash 1.39%, fat (ether extract) 7.94%, protein (N × 6.25) 19.52%, sodium (as Na) 0.061% or 61 mg./100 gm.

Calories.—1.50 per gram; 42.5 per ounce.

Use.—A useful adjunct for the planning of low-fat, low-sodium dietaries.

Cellu Brand Dietetic Pack Peanut Butter.

Ingredients: Roasted peanuts, peanut oil, and very small amount of sugar.

Analysis (submitted by manufacturer).—Total solids 99.40%, moisture 0.60%, ash 2.12%, fat (ether extract) 50.24%, protein (N × 6.25) 29.94%, carbohydrate other than crude fiber (by difference) 15.23%, reducing sugars (as sucrose) 7.47%, starch 3.45%, crude fiber 1.87%, sodium (as Na) 0.0078% or 8 mg./100 gm.

Calories.—6.14 per gram; 174 per ounce.

Use.—A useful adjunct for the planning of low-sodium dietaries.

COUNCIL ON PHARMACY AND CHEMISTRY

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

R. T. STORMONT, M.D., *Secretary.*

Progesterone-U.S.P. (See New and Nonofficial Remedies 1952, p. 348).

The Upjohn Company, Kalamazoo, Mich.

Solution Progesterone in Oil: 1 cc. ampuls and 5 cc. vials. A solution in cottonseed oil containing 5 mg. (5 I.U.) of progesterone in each cubic centimeter. Preserved with 0.5% chlorobutanol.

Solution Progesterone in Oil: 5 cc. vials. A solution in cottonseed oil containing 10 mg. (10 I.U.) of progesterone in each cubic centimeter. Preserved with 0.5% chlorobutanol.

Secobarbital Sodium (See New and Nonofficial Remedies 1952, p. 244).

American Pharmaceutical Company, New York.

Capsules Secobarbital Sodium: 0.1 gm.

Gane's Chemical Works, Inc., Carlstadt, N. J.

Powder Secobarbital Sodium: Bulk; for compounding use.

Premo Pharmaceutical Laboratories, Inc., South Hackensack, N. J.

Capsules Secobarbital Sodium: 0.1 gm.

Streptomycin-U.S.P. (See New and Nonofficial Remedies 1952, p. 132).

Chas. Pfizer & Company, Inc., Brooklyn.

Solution Streptomycin Sulfate: 2 cc. Steraject cartridges, 2 cc. vials, and 10 cc. vials. A citrate buffered solution containing the equivalent of 0.5 gm. of streptomycin base in each cubic centimeter. Stabilized with 0.2% sodium bisulfite and preserved with 0.25% phenol.

Hexamethonium Chloride (See THE JOURNAL, Jan. 31, 1953, p. 385).

Burroughs Wellcome & Company, Inc., Tuckahoe, N. Y.

Solution Hexameton Chloride: 10 cc. vials. A solution containing 33.7 mg. of hexamethonium chloride (25 mg. of hexamethonium ion) in each cubic centimeter. Preserved with 0.1% methylparaben.

Tablets Hexameton Chloride: 0.25 and 0.5 gm.

Sulfadiazine-U.S.P. (See New and Nonofficial Remedies 1952, p. 95).

The Bowman Bros. Drug Company, Canton, Ohio.

Tablets Sulfadiazine: 0.5 gm.

Secobarbital (See New and Nonofficial Remedies 1952, p. 244).

Gane's Chemical Works, Inc., Carlstadt, N. J.

Powder Secobarbital: Bulk; for compounding use.

Penicillin for Inhalation (See New and Nonofficial Remedies 1952, p. 121).

Chas. Pfizer & Company, Inc., Brooklyn.

Soluble Tablets Potassium Penicillin G: 50,000 and 100,000 units.

THE JOURNAL
OF THE AMERICAN MEDICAL ASSOCIATION
535 N. DEARBORN ST. . . . . CHICAGO 10, ILL.
Editor . . . . . AUSTIN SMITH, M.D.
Associate Editor . . . . . JOHNSON F. HAMMOND, M.D.
Editor for Medical Literature Abstracts . GEORGE HALPERIN, M.D.

Subscription price . . Fifteen dollars per annum in advance
Cable Address . . . . . "Medic, Chicago"

PROCEEDINGS OF SPECIAL SESSION OF HOUSE OF DELEGATES

At a historic special session in Washington, D. C., on March 14, the House of Delegates of the American Medical Association voted unanimously to support President Eisenhower's proposal to reorganize the Federal Security Agency. This vote has aroused considerable interest within the medical profession and has stirred both approval and criticism.

To report fully to the members on the events leading up to the special session, as well as on the House action, THE JOURNAL last week (March 28) carried extensive editorial comment and a message from the President of the Association, Dr. Louis H. Bauer. The current issue contains the proceedings of the House of Delegates meeting, including the full text of the addresses by President Dwight D. Eisenhower, Sen. Robert A. Taft, Congressman Walter H. Judd, and Dr. Bauer.

Every physician is urged to read the reports on the meeting carried in these two issues of THE JOURNAL. They provide a complete and clear picture of the way the A. M. A. Board of Trustees and House of Delegates function; they explain fully the proposal to make the Federal Security Agency an executive department; and they describe the thinking on this important move, which finally culminated in a unanimous affirmative vote.

MEDICOLEGAL ABSTRACTS

One of the regular activities of the Bureau of Legal Medicine and Legislation is the preparation of abstracts of court decisions of medicolegal importance. Nearly every issue of THE JOURNAL contains one or more of these abstracts. From time to time, since 1925, these abstracts have been bound together in book form, and now the fourth of such bound volumes is available for distribution. This book contains all of the medicolegal abstracts that appeared in THE JOURNAL from 1941 to 1946 inclusive, and the 52-page index, emphasizing the medical aspects of the cases reported, ranges from "Abandonment of Patients" to "X-Rays." The fifth volume, containing abstracts published from 1947 to 1952 inclusive, is in the process of preparation.

RESEARCH ON A VACCINE FOR THE PREVENTION OF POLIOMYELITIS

The recent progress in poliomyelitis research has been the result of step by step advances beginning in 1909 with the demonstration that poliomyelitis is caused by a virus. The present advanced stage of experimentation has been attained only because many of the basic problems have been resolved by numerous investigators who have participated in the comprehensive program of research. Chief among their contributions are the discovery of methods for propagating the virus in living cultures of human and monkey cells of non-nervous tissues; the discovery that three different immunologic types of the virus are capable of causing paralytic poliomyelitis in human beings and that significant protection against the paralytic consequences of both experimental and natural infection with the virus is provided by barely detectable levels of antibody in the circulating blood.

The experimental vaccine reported by Salk [1] and his collaborators last week in THE JOURNAL contains each of the three different immunologic types of the poliomyelitis virus propagated in living cultures of the epithelial cells of the monkey kidney. The virus preparation is rendered noninfectious by the use of formaldehyde. The use of a mineral oil emulsion was based on experience reported in this issue of THE JOURNAL (page 1169). Extensive and documented studies in progress for several years on emulsified influenza vaccine show most promising results not only in creating greater antibody response per unit of virus employed but also in maintaining these higher levels for longer periods of time.

In the human subjects who received the experimental poliomyelitis vaccine a significant rise in titer of antibody developed against all three types of the virus. The indications are that the antibody response in the human subjects, following an injection of the new vaccine preparation, should be adequate to provide significant protection against the paralytic consequences of a natural infection with the poliomyelitis virus. Furthermore, in none of the 161 subjects involved in the human studies thus far have there been observed any untoward side-effects.

The recommendations of a group of distinguished persons concerning the significance of recent progress in the development of a vaccine for poliomyelitis are summarized in this issue of THE JOURNAL in Dr. Thomas Rivers' letter on page 1224. Research of this kind cannot be hastened. The ultimate goal requires a willingness to take cautious, logical, step by step advances. Each new step should be taken only after establishing the wisdom of the preceding one. With the approach of the poliomyelitis season, there is danger that many will advocate larger and faster steps.

Although the laboratory tests and the early clinical studies appear to be most encouraging, the degree of safety of the preparations now being tested can be determined only after extensive studies in the field. To this end Dr. Rivers and his committee offer support to the Pittsburgh investigators to expand these studies at a cautious pace. This extension will require the cooperation of the public who will seek advice from the family physician.

1. Salk, J. E.: Studies in Human Subjects on Active Immunization Against Poliomyelitis: 1. A Preliminary Report of Experiments in Progress, J. A. M. A. **151**: 1081 (March 28) 1953.

SLIDE CULTIVATION OF TUBERCLE BACILLI

Berry and Lowry point out that the characteristically slow growth of Mycobacterium tuberculosis is a severe handicap to both clinical and research work. Definite diagnosis of tuberculosis depends on the demonstration of the tubercle bacillus. Pinner,[1] in a study of 533 cases from which the tubercle bacillus was recovered, found that direct examination of sputum smears or concentrates is only about 60% efficient. Decker, Ordway, and Medlar [2] state that in only about 6% of persons with minimal tuberculosis can the tubercle bacillus be demonstrated by direct examination of the smear. In 269 cases of minimal tuberculosis reported by them, smears were positive in 5.9%, whereas cultures or guinea pig inoculation demonstrated the presence of tubercle bacillus in 69% of these cases. The culture method, although reliable, is very time consuming. The interval between inoculation and the macroscopic appearance of growth is from three to eight weeks.

A new method for the cultivation of tubercle bacilli was developed by Pryce [3] in 1941. In this method, as modified by Berry and Lowry, and by Oeding, smears of sputum were spread over slides, were allowed to dry, and were then treated with 6% sulfuric acid for 20 minutes, washed twice in sterile distilled water for 10 minutes, and transferred to the culture medium. After incubation for six to seven days at 37 C, the slides were washed, dried, and stained by the Ziehl-Neelsen method without counterstain. Berry and Lowry [4] employed Kirschner's medium with serum albumin added in a concentration of 0.5%. Growth of micro-organisms was evident in from one to six days. In a study of 87 sputums known to contain tubercle bacilli Berry and Lowry [5] found that 55% were positive with the slide culture method while 82% were positive with the routine culture method. Of 58 gastric specimens, 60% were positive by slide culture method and 71% by the routine culture method. The average time of incubation for routine cultures was 37.4 days. Almost 20% of the positive routine culture showed growth only after six weeks or more of incubation. The average time of incubation for the positive slide cultures was three and one-half days. Oeding,[6] in examining 200 sputums, used the microculture method, direct microscopic examination by the Ziehl-Neelsen method, and cultivation on Löwenstein's medium. The microcolonies of the tubercle bacillus in the slide method were sufficiently large after five to seven days so that they could be found with low magnification. All colonies were well developed after seven days in the incubator. The microculture method was found to be definitely inferior to the Löwenstein method with regard to the number of positive cultures. Oeding, however, points out that because of its simple technique and earlier results the microculture method should be useful when a rapid cultural diagnosis is desired. The method could also be used for determination of sensitivity to streptomycin or other antibiotics directly in sputum, as well as for morphological studies of the tubercle bacillus.

Hesselberg and Oeding [7] examined 2,153 sputums for tubercle bacilli and found 571, or 26.5%, positive. There were 219 (10.2%) positive smears on direct examination, while 357 (16.6%) were positive in slide cultures and 545 (25.3%) in Löwenstein's culture. Among the 571 positive sputums, 38.4% were found directly, 62.5% in slide cultures and 95.4% in Löwenstein's culture; 324 sputums were positive both in slide culture and on Löwenstein's medium, 204 only on Löwenstein's medium and 17 only in slide culture. The slide method appears to be a valuable routine procedure for the demonstration of tubercle bacilli in sputum. While it is inferior to the Löwenstein culture method, it is far superior to direct examination. The great advantage of the slide method is the rapid diagnosis it affords.

INCREASED ADMISSIONS TO NURSING SCHOOLS

According to a release from the Committee on Careers in Nursing, National League of Nursing, almost 500 more students were admitted to nursing schools in 1952 than in 1951. There were 42,103 new students for 1952 in the United States, but an additional 439 were enrolled in Hawaii and Puerto Rico. In 1951 there were 42,053 enrollments. The committee believes this increase is encouraging and that it indicates the beginning of a gradual rise in nursing school admissions that may be expected over the next few years as the 17 to 18-year-old population increases. The committee warns, however, that, because of the lower birthrate during the depression, a sharp increase in nursing school admissions cannot be anticipated until 1958, when the babies of World War II will be graduating from school.

This increase and the possibilities for the future are encouraging not only to the nursing profession but also to the medical profession and the public. The nursing profession is an old and honored profession, and its contributions to the community sometimes are accepted without thought and their value overlooked. Perhaps there are times when nurses may think they are not appreciated, because it is human for all of us at times to feel this way, especially when no kind remarks are offered after special services have been rendered. Nurses can be assured, however, that their contributions as part of the health professions are known and respected by all groups and especially, of course, by the medical profession. Physicians everywhere will be encouraged and delighted to know of the increase in nursing enrollments in 1952 and unquestionably will hope for a continuation of this upswing. It seems reasonable also to expect them to aid in recruitment programs throughout the country as they, even better than the patients, know the value of nursing in the life of any community.

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3. Pryce, D. M.: Sputum Film Cultures of Tubercle Bacilli: A Method for the Early Observation of Growth, J. Path. & Bact. **53**: 327-334 (Nov.) 1941.
4. Berry, J. W., and Lowry, H.: A Slide Culture Method for the Early Detection and Observation of Growth of the Tubercle Bacillus: A Preliminary Report, Am. Rev. Tuberc. **60**: 51-61 (July) 1949.
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6. Oeding, P.: Detection of Tubercle Bacilli in a Routine Material of Sputa by Means of the Micro Culture Method, Acta tuberc. scandinav. **25**: 208-215, 1951.
7. Hesselberg, I., and Oeding, P.: Slide Cultivation of Tubercle Bacilli as a Routine Procedure in a Material of 2153 Sputa, Acta tuberc. scandinav. **27**: 217-225, 1952.

ORGANIZATION SECTION

PROCEEDINGS OF SPECIAL SESSION OF HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION HELD AT WASHINGTON, D. C., MARCH 14, 1953

First Meeting—Saturday Morning, March 14

The House of Delegates of the American Medical Association convened in Special Session in the Presidential Room of the Statler Hotel, Washington, D. C., and was called to order at 10:00 a. m., by the Speaker, Dr. James R. Reuling.

Call for the Special Session

The Secretary read the following call for the Special Session, stating that the provisions of the Bylaws had been complied with regarding the holding of special sessions of the House:

To the Members of the House of Delegates of the American Medical Association:

In compliance with the official request of the Board of Trustees that the House of Delegates be convened in Special Session, I, as Speaker, under authority of Chapter IX, Section 3 (B) of the Bylaws hereby officially call the House of Delegates of the American Medical Association to convene in Special Session in the City of Washington, District of Columbia, at 10:00 a. m., Eastern Standard Time, on the fourteenth day of March, 1953.

The business to be transacted at this Special Session shall be limited to the consideration of the President's program for reorganization of the Federal Security Agency.

The House shall remain in session until this business is completed.

This call is issued February 19, 1953.

JAMES R. REULING, M.D.
Speaker, House of Delegates,
American Medical Association.

Report of Reference Committee on Credentials

The Reference Committee on Credentials was appointed by the Speaker, as follows:

KARL S. J. HOHLEN, Chairman, New Hampshire
HARVEY B. MATTHEWS, Section on Obstetrics and Gynecology
EDWARD P. FLOOD, New York
HOWARD K. PETRY, Pennsylvania
WILLIAM WESTON JR., South Carolina

Dr. Karl S. J. Hohlen, Chairman, reported that 179 out of a possible 185 delegates had been seated, and the Speaker announced that a quorum was present.

Invocation

The Rev. Edward L. R. Elson, D.D., Litt.D., Minister of the National Presbyterian Church, Washington, D. C., delivered the following invocation:

Eternal God, Creator, Preserver, and Redeemer of mankind, in whom we live and move and have our being, we thank Thee for Thy mercies which are new every morning. We dedicate this day to Thy service. We thank Thee for all Thy servants who are devoted to the ministry of compassion and healing. Direct the deliberations of this body that it may be led by the spirit of the Great Physician of men's souls and bodies. O God, Who art the Ruler of men and nations, we thank Thee for this good land which Thou hast given us for our heritage. Make us a people always mindful of Thy favor, glad to do Thy will, and ever the servants of righteousness and truth. Strengthen and uphold the President and all whom we have set in authority over us that they may uphold what is right, and correct what is wrong, and lead us in the ways of truth and holiness, that we may remain a nation whose God is the Lord, through Jesus Christ, our Lord. Amen.

Tellers and Sergeants-at-Arms

The Speaker appointed as Tellers:

WARREN W. FUREY, Illinois
L. A. ALESEN, California
ROBERT B. HOMAN JR., Texas
L. SAMUEL SICA, New Jersey
WILLIAM M. SKIPP, Ohio

The following persons were appointed by the Speaker as Sergeants-at-Arms:

LOUIS M. ORR II, Florida
JAMES STEVENSON, Oklahoma
GEORGE A. UNFUG, Colorado

It was announced by the Speaker that no reference committees other than the Reference Committee on Credentials would be appointed for the Special Session, since the business before the House could be conducted in open session or by the House resolving itself into a Committee of the Whole.

Roll Call

There being no objection, the Secretary called the roll of the House by states, territories, scientific sections, and government services, the Speaker declaring that the records of the Credentials Committee would constitute the individual roll.

Motion to Permit Persons Other Than Officers or Delegates to Address the House

On motion of Dr. Charles H. Phifer, Illinois, seconded by Dr. Val H. Fuchs, Louisiana, and carried, the House gave permission to the President of the American Medical Association, the Chairman of the Board of Trustees, and the Speaker to introduce to the House for the purpose of making addresses, such persons as they feel may be helpful to its deliberations and subsequent action.

Introduction of Distinguished Guests

The Speaker introduced to the House the Hon. Walter H. Judd, member of the United States House of Representatives and a physician, and Vice Adm. Joel T. Boone, Chief Medical Director of the Veterans' Administration, both of whom acknowledged the introduction.

Reception Committee

It was announced by the Speaker that the Reception Committee that would greet the President of the United States when he arrived at the hotel to address the House and escort him to the rostrum was composed of Drs. Louis H. Bauer, President; Edward J. McCormick, President-Elect; Dwight H. Murray, Chairman, Board of Trustees; E. Vincent Askey, Vice Speaker of the House of Delegates; and Elmer L. Henderson, Past President, of the American Medical Association. The Speaker also announced that for security reasons, from 10:20 a. m., when the President reached the hotel, no one would be permitted to enter or leave the meeting room until the President had addressed the House and left.

Introduction and Address of the President of the United States, Hon. Dwight D. Eisenhower

Dr. Louis H. Bauer, President of the American Medical Association, presented to the House of Delegates the Hon. Dwight D. Eisenhower, President of the United States of America, who addressed the House as follows:

Dr. Bauer, Distinguished Guests, Ladies, and Gentlemen: Sometimes an individual finds himself in a position that he would like to explain even to himself. I certainly have no prescriptions to offer for anything that you people might be thinking about, and so my appearance here is confined mainly to exercising my privilege of welcoming you, on behalf of the Administration, to your deliberations in this city, to express our great belief that the decisions you reach in the administrative field, and particularly where they touch on the functions of Government, will represent your views of what is best for the United States of America, and not from any other viewpoint.

I have found in the past few years that I have certain philosophical bonds with doctors. I don't like the word "compulsory." I am against the word "socialized." Everything about such words seems to me to be a step toward the thing

that we are spending so many billions to prevent, that is, the overwhelming of this country by any force, power or idea that leads us to forsake our traditional system of free enterprise. That is the doctrine of the Administration, it is most certainly the doctrine of the Republican Party and its Republican leaders in Congress. They are here to speak for themselves, but I am sure they will allow me that one word. We live by it, and we intend to practice it.

We thoroughly understand also the importance of your function in our society. We also understand and are determined to meet the requirements of our population in the services that only you can provide, but we do have faith that Americans want to do the right thing and that the medical profession will provide the kind of services that our country needs better with the cooperation and the friendship of the Administration, rather than its direction or any attempt on its part to be the big "Pooh-Bah" in this particular picture, and we are not going to try to exercise it. That is what I came to repeat to you. In many sections of this country, all over many areas, I have said these things before and to some of you that are here today. I repeat them, and I tell you it is going to be the philosophy of this Administration for the next four years, or as long as the good Lord allows me to stay during those four years. That is our pledge, and again I express the confidence that you people will be helpful according to your judgment of what is good for the United States of America.

Now, let me repeat, on the part of the Administration, a most hearty welcome. Good-by and good luck!

Remarks of President Louis H. Bauer

Dr. Louis H. Bauer, President, presented the following remarks:

Mr. Speaker, Members of the House: A little bit later I hope to give you a very detailed story of all that has transpired. We have a very distinguished guest on the platform whom we want to have speak to you, and I do not want to make him sit here and listen to everything that I have to say. So, for the moment, I am only going to make three or four clarifying statements which I understand are necessary, due to some misunderstandings.

Why was the House of Delegates called? Because the Board of Trustees had a proposition placed before it which had never been placed before it before. The Board could not act on it. It had to ask the House because the matter would be determined before June and therefore a Special Session had to be held. It takes twenty days to call a Special Session, according to the Bylaws. It was not known until February 18 that this problem would have to be settled at this time. Consequently, no longer notice could be given.

Some doctor asked, "Why didn't you call us before the bill was introduced?" Gentlemen, I submit that, if we had, what could you have talked about? We could have told you what probably would take place and what might take place, and then when it was, it might be something entirely different that was introduced, so your meeting would have been in vain. So we felt we had to know just what was proposed before we could ask you to give your time to come here and discuss the proposition. We had hoped that this bill would be introduced sufficiently long in advance so that we could send you copies of it before you left home and give you an opportunity to study it, but, unfortunately, it was not introduced until Thursday, and copies were not received until late that night. It manifestly was impossible to get them to you before you left home. The best we could do was to give them to you when you arrived here this morning.

Gentlemen, this problem is yours. I shall give you the details of it a little later, but it is for you to decide, whether it takes you five minutes, five hours, five days, or five weeks. Time is not of the essence. It is important that you reach a sane decision on a very important matter. I am sure you can not arrive at a decision in five minutes, nor do I think it is going to take you five weeks, but somewhere in between I am sure you will come up with a solution. Please listen to this with an open mind and do not feel that it is the same thing which has come before you before. I can assure you it is not. It is far different from anything which has heretofore been proposed, and how different I shall endeavor to explain later. But I do not want to trespass any longer on the time of our distinguished guests.

Introduction and Address of Hon. Robert A. Taft

United States Senator Robert A. Taft was introduced by Dr. Louis H. Bauer, President, and addressed the House as follows:

Ladies and Gentlemen, and my friends of the American Medical Association: I am very much honored to be here. I am very glad of the opportunity of thanking you for all you have done in the interest of the prevention of socialization of this country. I have been associated pleasantly during recent years with many of your officials and with many of your members. I have enjoyed that association, and I am delighted to be here with you this morning. I think few people realize the fact that the American Medical Association has been on the battle line against the extension of socialization and the federalization of all kinds of activities that properly belong at the state level and properly belong in private hands. You have had a particular concern, namely, the prevention of compulsory federal medical insurance, so-called, but, after all, that was only the opening wedge to the extension of all kinds of welfare services and welfare activities through the federal government.

I have seen the Federal Security Agency's report from year to year clearly indicating its intention, if it could, to socialize all welfare services, to provide welfare services generally of every kind to everybody, regardless of financial condition, and then to federalize that welfare work. In defeating and combatting the attempt to spread that fear doctrine to medicine, you have protected all other welfare services and all other state and local services. Certainly your leadership and the leadership of the American Medical Association should be thanked by everybody in this country who believes in the perpetuation of freedom and a free economic system and a free system in governmental matters in the United States. I am glad to hear the President state the philosophy, in which I believe, against compulsory action, the philosophy against the extension of federal control over these matters.

We are proposing to set up a commission to study the whole problem of federal and state relations. It will cover the field in which this new department will operate and also other fields in which the federal government and the states come into relationship. The general theory is to try to determine a philosophy of federal action in these fields in which, clearly, the primary obligation under our constitutional system rests on the state and local communities. I think that proposal will soon be made public, but, roughly speaking, I can read the purposes that will be contained in the resolution creating such a commission.

> It is set up because the activity of the Federal Government has been extended into many fields which, under our constitutional system, are the primary interest and obligation of the several states and the subdivisions thereof. The commission shall study and investigate all the present activities in which federal aid is extended to state and local governments. It shall determine and report whether there is justification for federal aid in the various fields in which federal aid is extended.

That would cover not only health, education, welfare of all kinds, housing, and roads, but also many other things. The purpose is to develop a philosophy which will prevent and check this theory and this condition that we have had to face here for the last twenty years from continuing; that is, that when you come into the study of a particular subject, and you show that something must be done about it, the question of whether it shall be done at the local level and the individual level and the voluntary organization level, or whether it shall be done by the federal government is passed over lightly without consideration of constitutional principles or otherwise. I hope we can develop that theory. I think that commission is supposed to take a year. By the time it reports, I hope we may get a definite philosophy that says where the federal government can go, where federal aid may be justified, what the conditions of it should be, and the general scope of federal activity which today has extended to a point where federal aid now costs the federal government alone about 1.5 billion dollars. I speak of that because it presents, I think, the same general

philosophy that I believe is behind the present proposal for the creation of a Department of Health, Education and Welfare. I believe that such a department is in the interest of the medical profession as well as many others.

I introduced a bill with Senator Fulbright back in 1947 which had extensive consideration. It is said, of course, that health, education, and welfare have no direct connection, and they do not, except in this one regard, and that is the one that I have emphasized. It is, in fact, a department to cover those matters in which the federal government's interest is properly a secondary interest under our Constitution, and to cover those matters where the primary obligation is on the state and the local communities to deal with it. That is the only thing that ties those departments together. It is quite true, entirely true, that there is no direct connection of the subject matter. Where you deal with these matters, education of course, is completely separate, health is separate, welfare is separate. The only justification for setting up a department here is that those are the matters which are secondary. I think we gain by recognizing that fact. Here is a group of interests where the federal government is not supposed to go out and assume the obligation, the responsibility for the activity, but is simply acting in the proper role of the federal government, as it has in many other places, research, study, providing information, and finally providing assistance where assistance is absolutely necessary to see that a general program required and demanded by public opinion may be carried out.

As a matter of fact, the only change here, at the present moment at least, is whether we have a separate Federal Security Agency or whether it is a department of government. I think those people who are concerned with those activities gain by having a department of government. The man who represents those activities must sit in the Cabinet. He must be subjected to the philosophy and the belief in government of all the other members of the Cabinet. He has to coordinate his activities with those of the Army and the Treasury and everyone else. My experience is that when you set up one of these independent agencies responsible only to the President, it becomes in fact an independent agency. It does what it pleases. It does not pay any attention to public opinion. Theoretically, it is under the President, but the President has no time to determine the policies of that department. It is out of touch with the rest of the government.

I feel very strongly that under this Administration there can be no question about the advantage of such a condition. If somebody in the Cabinet representing these activities were sitting there listening to the views of the others, and I think the views of the others accord very largely with yours, I think it would have been an improvement even in the Truman Administration. I think if Mr. Oscar Ewing's plans had been up against the views, which were conservative, of Mr. Snyder, and two or three others of the Cabinet officers, they would have been forced to more of a modification than they were when he was practically an independent officer who once in a while saw the President. As I say, I feel it would have been better then, but certainly I have no question now but that it is better to have this group coordinated with the rest of the Administration, coordinated with the rest of the Cabinet.

I believe also, from the interests of those who are concerned, that they have a far more effective access to the President to present their views through the Cabinet officer, who will be Mrs. Hobby at the present time certainly, than they do if they have simply a separate administration set off by itself.

I say again that I think there is and has been a perfectly good argument: medical people feel, health people feel, that in some way in going into such a department, you subordinate your particular interests and concern, which is of extreme importance, of course, to a general kind of "grab-bag department." I think that is a real mistake. Suppose we did go ahead with a department of health, a department of welfare, a department of education: I think you would acknowledge and you would find that it backed the idea that federal government had the sole and leading interest in that particular activity. I think you would find that the department of education would soon undertake to feel that it had the same overriding importance in the educational field as the Department of Agriculture has today in agriculture. I think if you had a department of health, you would be far more likely to have that department trying to assume the guidance and the obligation to go after all of the states and make them do the things it wants to do than if you have a department where federal action in that field is recognized as a secondary obligation.

This department may include other things as we go on. I am somewhat inclined to think the Public Housing Section ought to be under it again, and I emphasize again that I think that would be a very helpful field in which to get a decision that the federal interest is a secondary interest, that the primary responsibility is on the states and the local communities.

There is one exception which anybody can criticize in my statement, and that is that there is one federal activity in this department where the federal activity is not secondary; that is the Federal Old Age and Survivors Insurance. As I look back over the twenty years of the Roosevelt Administration, I have warned against many socialistic plans that were attempted, but I think perhaps the greatest advance toward socialism that was actually made was the establishment of that field. I think it put the federal government into a field where it did not properly belong, but it is there. I hope that we may revise it so as simply to recognize that it is an exception to everything and that we may set up some kind of a direct pay-as-you-go federal pension system, simply recognizing that the question of old age pensions is a peculiar matter which will be dealt with and dealt with directly, not dealt with through any insurance idea but possibly eliminate the insurance, which is a fake after all, for actually it is simply another tax to support another federal activity. That is what it is. The actual distribution has some relation to what people pay, but a very, very remote relation to what they pay, and I think it would be far better myself to have the pay-as-you-go system, to pay a minimum pension to everybody, and grade the pensions up on the basis of the income that has been received during active life. As I say, those are matters that can be considered. In any event, it is true that that is an exception to my general view of this department, and I hope that it may gradually be worked out and recognized as an exception. I do not think today the people of the country are sufficiently concerned about old age pensions as such, but it ought to be set up separately and recognized, as I say, as an exception.

This particular plan provides for a Special Assistant to the Secretary, a Special Assistant for Health and Medical Affairs, who will be appointed by the President, who shall be a doctor, who shall work with the Secretary, and who, under the Secretary, will try to coordinate all of the medical activities.

I might say, incidentally, that I do not think the Hoover Plan idea of a single medical administration will ever work. I do not think we could ever get it through Congress. The difficulty with the Veterans Administration and other activities is such that I believe it would be impossible to adopt it even if we wanted to do it. I said already why I think a department of this kind with a section clearly devoted to medicine is better for the medical profession than a so-called independent agency, set off by itself.

I think I would have liked to see in this plan a little more sweeping reorganization. The new head of the Federal Security Agency, who presumably will be the secretary of the department, has the power under this to make a number of changes. She will have an undersecretary, two assistant secretaries, and this Special Assistant for Medical Affairs. She will have the right to appoint a commissioner of social security. The way this thing is operated under Civil Service is that every person in the entire Federal Security Agency has been covered by Civil Service. I do not know whether Mrs. Hobby had a clerk or a stenographer that was not under Civil Service when she came into that office. This makes it clear that she has her own staff to operate, and, of course, those who fill the comparable positions would be out unless she chooses to reappoint any of them.

The President has also announced his intention to reverse the Truman orders which covered in Civil Service a good many positions which were really policy-making posts and never should have been covered by Civil Service. I have not studied the question of how far that will be extended in this

particular department. It was said at the White House that it would cover several hundred employees, divided up between the departments, and that might mean more positions; I do not know. Mrs. Hobby, I understand, has requested a reclassification of a number of jobs which were covered by Civil Service and I think covered improperly under any system of real Civil Service. There are other proposals, general proposals, outside of that, as to methods by which the Agency may secure at least the ability to appoint its own people to run its own affairs.

Somebody here said recently that the Republicans under present circumstances will be doing a good job if they can infiltrate the Truman administration in one year as far as the Communists had in the past administration.

I can assure you that there is a really fundamental delay and difficulty which exist today, namely, that the Civil Service system, intended to protect the men who had a career service in government, should be used to protect those who have a completely different philosophy in policy-making jobs from those who have taken over the government today. There are problems being considered, as to how far the Civil Service status shall be recognized in cases where the job itself is not under Civil Service. They say that the Federal Security Agency, among others, one or two other departments, is responding to this request as to what jobs are under Civil Service, and that it is omitting legal jobs paying from $8,000 to $12,000 a year completely from the open roster. All the other departments considered that they are open to appointment from Civil Service. They omitted them on the ground that the people who happened to occupy them had themselves a Civil Service status. I think that at least is being studied. The appointment of the new Commissioner of Civil Service shows the intention to study the problem. I have no doubt that before we are through, Mrs. Hobby will have complete power to clean house where house ought to be cleaned, to continue the technical people, the people who have done a life job and have the technical knowledge necessary to give effective federal service.

That about covers what I have to say. I have only this to add, that I am quite convinced that the general benefit of the medical profession, because of preventing the extension of federal activity in the medical field beyond its proper scope, will be assisted by having this department, that in four years with the assistance of this commission, we can build up a philosophy which I hope for all time to come will dominate the policies of the federal government and establish a pattern which will protect the medical profession, as well as other fields, against intrusion on the operation of a free system, and which will protect the states and local governments in their right and their duty and their obligation under our system, to provide whatever in the way of public health and legislation is necessary to carry out the matters that are necessary for the benefit of the health and welfare of the people of the United States.

Statement of President Louis H. Bauer

Dr. Louis H. Bauer, President, presented a further statement, as follows:

Mr. Speaker, Members of the House, Distinguished Guests: As I said a few moments ago, I shall try to tell you in detail what had led up to this occasion. Senator Taft made a lot of my speech for me.

Gentlemen, shortly after the election, we endeavored to get into communication with people who would be in Washington to arrange conferences. We had been assured during the campaign that, if there were a change in the Administration, we need worry no longer about the socialization of our profession and that we would not be ignored when it came to the adoption of medical policies. Consequently, we made these contacts, and naturally, following the election, a good many things interfered until the Inauguration. Most people did not want to engage in too many conferences, because they wanted to see whether they were confirmed, which is understandable. However, on February 3, several of us had an appointment with Mrs. Oveta Culp Hobby, the new Federal Security Administrator.

What I am going to say is contained in the letter which was sent to you over my signature, but I do not know whether you have all seen it, and I am going to take the chance of boring some of you by repeating some of the material in that letter, because I think it is important that you have the whole picture before you and not just part of it.

We were most cordially welcomed by the Federal Security Agency, and it was quite apparent after a few minutes' conversation that the atmosphere in Washington, so far as the American Medical Association and the medical profession was concerned, was quite different. It was the first time that the door of that agency was open to us since it was organized. It was quite apparent that the Federal Security Administrator has many of the same ideas that we have. It was also quite apparent that her hands were tied. Senator Taft mentioned, and I should like to stress, not only in connection with the Federal Security Agency, but with all other government departments, that an administration cannot function when people in the administrative and policy-making positions have a philosophy entirely different from that of the administration. There is not a single person—and I think I am correct in saying not a single one—in the Federal Security Agency in an administrative or policy-making position that is not frozen there by Civil Service. Now, I do not say that all of them have a philosophy different from ours, but, as you know, there are a lot of them that have a different philosophy from ours. I will not mention names; I don't think it is necessary. Something has to be done about that. You undoubtedly read in the papers, and Senator Taft mentioned it himself a few minutes ago, that the President has intimated that he is going to unfreeze a lot of these administrative and policy-making jobs from Civil Service. That is essential if he is to carry out his ideas. If you were sitting at the desk as head of any agency or department and every paper that came on to your desk for your signature was prepared by somebody whose philosophy was entirely different from yours, how could you advance? You could not. That is the situation here today, not only in the Federal Security Agency but in some of the other departments, and that, I believe, is the background of this statement that the President will unfreeze some of these jobs to permit people to be appointed who will go along with him and his ideas.

The following day, we had a conference with the President. Again, the conference was most friendly. He repeated to us essentially what he told you here this morning, and more besides. I do not have the right to quote the President of the United States, but I do not think he would mind my saying one thing, and that is: I told him that we had had a very satisfactory conference the day before with Mrs. Hobby, and that it was a great comfort to all of us to realize that the door to that agency was now open to us, and I said, "Incidentally, Mr. President, that door over there has not been open for a long while, either." He laughed, and said, "Well, it is now."

We discussed the possibility of an independent health department. It was apparent in our discussion with the Administration and with members of Congress that that is not in the cards. It is the feeling, I think, in the Administration that there are now too many independent agencies and that they should be brought together rather than split apart. I think Senator Taft stressed that point right there. In fact, there was one person who said he thought the greatest mistake the federal government ever made was splitting the Department of Commerce and Labor into two departments, because now you have two independent departments both dealing with industry and labor, both from different viewpoints, instead of being coordinated through one agency, and they did not want to make that mistake again.

I have always been in favor of an independent Department of Health; in fact, in my President's Page in THE JOURNAL in December, if you recall, I said we hoped we might get that, but did not want it tied in with education and social security. An independent department of health, under an unfavorable administration, could very well prove to be the octopus that would wrap its tentacles around you and strangle you. I will grant you that that might happen under any system, no matter what it is, but I think, as Senator Taft said, it is less likely to happen if it is not on its own.

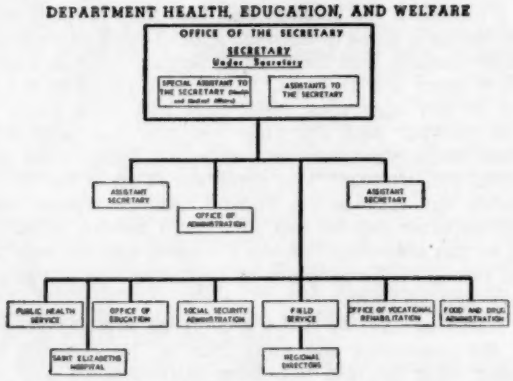
I do not believe, after nearly 80 years of standing for one thing, we ought to reverse ourselves, but since we cannot get that one thing, at the present time anyway, I think we should give very careful consideration to the present proposal.

As a result of our conference and after various telephone conversations, we were put in touch with the Rockefeller Reorganization Committee, which drafted this present program, and there were several of us who had conferences with that committee. This committee, also, was most cordial and very eager to get the viewpoint of the medical profession, and, since there was not to be an independent department of health, it wanted to do everything it could to see that medicine was properly protected.

Now, may I call attention to the fact that this reorganization bill is different from the two previous ones which were introduced in 1949 and 1950. This one does not departmentalize the department, but it does set up a special assistant to the Secretary, and everything pertaining to medical affairs must be screened through that special assistant before it reaches the Secretary.

If you had a departmentalization of the agency [Dr. Bauer refers here to the accompanying chart], suppose you had a section here of social security, one here of education, and one here of health, then you would have an assistant secretary in charge of health over here, but you would have nothing to do with these two over here.

DEPARTMENT HEALTH, EDUCATION, AND WELFARE



I know that some of you are very much concerned that you do not want social security to dominate medicine, and you are right, and you dont want education to dominate medicine; in fact, you do not want anything to dominate it. But in this system which is proposed, this special assistant will have something to say about anything in education or anything in social security which has any medical aspect whatever. We know that there are programs in education which are not primarily health but do have health aspects. We also know that there are things in social security which may not primarily be health matters but they have very distinct health implications, and if it were departmentalized, you could have nothing to say about those because they would not be mainly health. Under the proposed system, this special assistant will have something to say about all of those programs that have any health aspects whatever.

In addition, it is planned that this special assistant shall be the representative of the secretary at all interdepartmental hearings at which health is a topic for discussion. For example, if anything comes up in relation, say, to the Department of the Interior, in connection with Indian affairs, for instance, where they have health problems, then this man will be the liaison and the representative of the secretary at that hearing. He also will be the representative of the secretary before congressional committees dealing with appropriations and budgets, which is an exceedingly important position. He also will be the representative of the secretary at all international meetings involving health. So this person has considerable authority, more than has ever been offered to the medical profession before. I heard someone say that the special assistant is in an advisory capacity. That is true of everybody in the government except the President. A Cabinet officer is in an advisory capacity, and the President can overrule him.

Someone questioned the language of the plan where it refers to a recognized leader in the medical field with wide nongovernmental experience. The question was as to whether that meant a doctor of medicine. Yesterday afternoon I asked Mrs. Hobby that, and she said, "That is what the law is and the way we interpret it, and you may assure the House of Delegates from me that that means a doctor of medicine from civil life who is not a career physician."

As I said, I do not believe, after 80 years of standing for one thing, we should throw the possibility of an independent health agency or department out of the window. It may be the ultimate solution, but again, as I said before, it requires careful consideration. I do believe, however, that this is a step in the right direction. The medical profession is in a strategic position at the present time. We have never been as favorably received and as favorably considered, certainly in my recollection, as we are at the present time. I feel that we should reaffirm our position for an independent department of health, but that we can accept this as a step toward our ultimate goal, reserving to ourselves the right at a later date to make recommendations for amendment of what will then be the existing law, even to the extent of demanding again an independent department of health if this plan does not provide the system which we hope it will provide. I may be wrong. I have been wrong before and probably will be again, but I have been very close to this thing. This is the fifth time I have been in Washington within a month. I know how the medical profession stands down here now, and I feel that this is an honest effort to try to do something for medicine which has never been done before. Maybe it is not the right answer, maybe it is not the complete answer, but at least it is a step toward the goal for which we have been shooting for nearly 80 years, and I think that is worth considering. Of course, there is a calculated risk. Anything you do has a calculated risk, but, gentlemen, this is going to be adopted.

As you know, the Reorganization Plan will become a law unless a resolution against it is passed by a constitutional majority of either House within 60 days, but I saw and heard that next Monday there will be a joint resolution introduced approving this and making it effective in ten days, and the feeling in Congress, so far as we have been able to determine, is that this is going to be passed. I do not believe that we should compromise our principles, but I do not think we have to. I think we only have to reiterate our position as to what we think should be the ultimate goal but that we can accept this now as a procedure which, in the process of evolution, may lead to that, and, if it does not, they are going to hear from us about it.

Address of Hon. Walter H. Judd

The Hon. Walter H. Judd, member of Congress, on the invitation of the Speaker, addressed the House as follows:

Mr. Speaker, you sort of caught me off base that time, but I would say I am always glad to say a few words. What your President, Dr. Bauer, has just said is unquestionably true. This Reorganization Plan is going to be passed. I will say at the outset that I regret that the Social Security elements are in the same basket with the other; at least I am not convinced that they have to be, or that it is best to have them in the same basket. The reason for that partly is because of our experience with the whole Social Security, Old Age Assistance, and so forth, program, because they are a tail that is bigger than all the rest of the dog at the present time.

I am sure that this arrangement Dr. Bauer has described gives the maximum protection against too great preponderance, or any preponderance for that matter, by this so-called insurance system over the health and medical aspects of the program. On the other hand, I feel strongly that it would be a mistake for the medical profession, just because it is not all that you want and all that I would like, to say that we are "agin it." I think that the position Dr. Bauer has outlined, and I know a good many of your officers feel is the correct one for us to follow, is also the wise and expedient one to follow. He said we have got to stick by our principles. That is right. I do not agree with an old cynic down here who, when I first came down, said to me one day, "Walter, there are times in politics when you have to rise above principles."

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happen if it is not on its own.

I am not counseling that. I would not do it myself. I think this is some progress, and, when I can't get all I want, I take what I can get as better than rejecting the whole thing and winding up with nothing.

I would like to make another point. I do not see how you are really going to get the change in some of this entrenched personnel which does not believe in what President Eisenhower and Senator Taft have outlined this morning, as well as your own officers, unless there is some change and reorganization. Stalin may be tough, and some of the other forces may be tough, but I do not know anything that is stronger than entrenched bureaucracy. Let me give you a few illustrations in the field where I particularly concentrate my efforts, foreign affairs. Right after the election, a lot of faces in the State Department were mighty long and gloomy, but by Inauguration Day they were very cocky. One of them said to me, "You fellows can write all the policies you want, but the basic policy will continue as it is." I said, "How are you going to do it?" He said, "Well, first, we are going to give the Secretary of State the Jimmy Byrnes treatment." I said, "What is the Jimmy Byrnes treatment?" He said, "Keep him out of the country for the first six months. We will get him over to Europe. He is going to the Middle East, then he will go out to the Far East. By the time he gets back, the things we have done will be his policy, no matter what he writes out in a statement to Congress." That is sheer realism on their part. The Secretary told us that this is the way things operate: You select an ambassador, and he is supposed to be a man of quality. He has to be confirmed by the Senate. The Senate goes into all his background, his personal ability and characteristics and his record, and decides whether or not—and it has to be by a two-thirds vote—he is a fit representative of the United States, capable of representing our country abroad. Then he is sent over to that country, and if his wife wants to invite in the wife of the foreign minister of the country to which he is assigned, for tea, she cannot do it unless he sends a cable back to the department to find out whether his wife can have the wife of the foreign minister to tea. Now, who decides? Some five thousand clerks down there in the office for Britain, or the office for Spain, or the office for Russia, or the office for South Africa, or whatever it is, not the ambassador who is ratified by the Senate, but some minor official makes this decision and sends it back. Mr. Dulles said, and I hope he is able to carry it out, but he cannot unless some changes are made, that he wanted to set up a system whereby an ambassador would be instructed not to cable to Washington for anything unless it was on a matter so important that if he were in Washington in person he would seek an audience with the Secretary or Undersecretary of State to discuss the matter. Anything else he should decide at the local level. All effective administration begins with the assumption that the man on the job knows best. Do not put him there unless he is qualified. If he is qualified, then make him responsible and hold him responsible.

The other day, the Secretary told me about a case in which I was interested. He said, "I wrote your friend a letter, and he has not answered it." I called the friend up and he said, "I answered it a couple of days ago." I called back and the Secretary said, "I am not surprised. I found the other day that a telegram to me has to go through forty-one hands before it gets to the Secretary." You send a telegram, and any one of them that disagrees with something that it says can get it into his own box, or get it delayed.

This is the way policy is determined: Some little fellow, a $5,000 or $6,000 a year man, writes a memorandum. It goes up to his superior who is really preoccupied with something else at the moment, and he doesn't know anything about it. He says, "It sounds all right to me," and he initials it. It goes on, and finally it gets up to the Secretary, and he says, "I don't know for sure, but all these fellows are for it; it must be all right," so it becomes an order. The policies are made down at the bottom, and that means you have got to have those fellows in your team.

Pat Hurley was out in China, sent out by the President of the United States to carry out a certain policy. He found the boys under him did not believe in that policy; in fact, they were telling the Communists that it was not a real American policy. He protested and came home. President Roosevelt said, "You are right and they are wrong," and stood by him. Pat went out and sent those fellows home. President Roosevelt died thirteen days later, and those fellows got back to Washington and were put in the department, the office for China. You see, out in China, they were under Pat, sabotaging his work, but they were sent back to Washington and put over him, writing the telegrams which he then had to follow. He resigned, as any self-respecting man would.

Now, you cannot get rid of these people in all these positions unless there is a reorganization which will allow you to abolish all sorts of jobs and bring in your own people. I think it has got to go further, and this is the last thing I will say. I think, and I have said this to the proper people, the President of the United States has got to go before the public and the Congress and say, "Ladies and Gentlemen, you elected me to this position. You wanted a change. I can't carry out that change unless you give me people who want it and will help produce it rather than people who don't want it in order sometimes to defend their past but in other cases to carry out that which is their own deep conviction." You see, it is not a matter of spoils and patronage, as the papers usually report it. It is a matter of whether or not the people who go to the polls and by a 55 per cent majority say they want a certain policy are to have the results of their own decision or to be frustrated and denied the results of their own democratic system.

We happened to win this last election—I am a Republican—but maybe after a few years, I am sure after a sufficient number of years, we shall have to be thrown out, too, by some outfit that I hope will be better, and, if we have got our people entrenched under this system, the administration which the people elect will be prevented from carrying out that which the people want. If we are to maintain our form of government, government from the bottom up, then you cannot allow anybody, in my point of view, who helps make a policy or who is charged with the authority and responsibility for carrying out the policy to be frozen under Civil Service. Let me put it this way: We would not expect our Minnesota football coach to lick Michigan if ten of the eleven players turned over to our Minnesota coach were Michigan men. It is just as simple as that. In order to win football games for Minnesota, you have to have Minnesota boys, and not Michigan boys.

I am saying all this because the problem that you have to deal with is bigger than the problem that you are dealing with in this meeting of the House of Delegates. You are dealing with the problem as citizens. That affects every single agency of our government. That affects your family and your bread basket and your boy, and the heritage that is entrusted to you as well as this, which is our primary responsibility, the practice of medicine. So I hope that, whatever you do today, all of you will go back as propaganda centers, if you wish, in your own communities, building up public sentiment, not only to change a few men at the top but to reexamine this whole system and get it so it works better.

I have been debating in the back of my mind whether to say this—I think I will—that the whole Civil Service philosophy, as it has worked out, has got to be reexamined. Like everything else, it has to be examined on the basis of its results after we have had some trial and error. We have some experimental data. The philosophy was put in by a Republican administration some thirty years ago, that this would guarantee getting into government the best men. We now find that what it is doing, after thirty years, is keeping in government the poorest men. The best men get frustrated and get out. The poorest and the medicocre stay in, and after thirty years too much of it is operating to keep the less able people in government instead of as a means by which, through examination, you get the best men. I am sure that it is necessary that there be a restudy of the Civil Service system, not only with reference to the things I have already mentioned but to some of the other features which have had to do with job protection and so forth. The idea was that you cannot ask a man to come in unless you can give him some security,

which is right. But it has gotten to a point where a man goes in not to do a job but because of the security, and his main concern is not to serve the United States but to serve himself. The government, on that basis, exists to serve employees instead of the employees existing to serve the federal government. That is a point that we must never allow ourselves to lose sight of, just the same as doctors, nurses, and the hired help in the hospital exist for the sick, and not the hospital to provide income for the doctors.

Introduction of Past President Elmer L. Henderson

Dr. John W. Cline, past president, introduced Dr. Elmer L. Henderson, past president of the American Medical Association, with the following remarks:

Gentlemen, your able and kindly Speaker has very graciously assigned this task to me. It is one which gives me a great deal of pleasure to be able to do. Emotion has no place in a deliberative body, yet I am afraid that I cannot make this presentation without some degree of emotion. That emotion is based on an affection which arises out of the lovable qualities of this individual, a deep respect for his wisdom, his vision, and his statesmanship, and a great admiration for his selfless devotion to medicine, his courage and his determination.

It seems to be historically true that each great crisis brings a great leader, and this man has steered us from the No. 1 position in the administration doghouse to a situation where the President of the United States and the majority leader of the Senate saw fit to address us today. Of course, he did not do it alone. All of you helped, and many thousands of your colleagues throughout the country. But every army requires a general, and it requires of that general that he be true to his trust, that he be able, that he be a competent strategist, that he have courage, and that he be a man of action. I think none of you would question that in 1948 American medicine faced the greatest crisis in its history. I think none of you would dissent from the point of view that the situation currently existing in Washington is vastly different.

In my remarks to the House, when you conferred the honor on me in June, 1950, I said of this individual, "He is the strong man of American medicine. For him, no task is too arduous, no job too onerous, no decision too difficult, no effort too great if it is in the interests of the American people and American medicine." That was true then; it is even more true now. I doubt that many people appreciate the tremendous service and the statesmanlike service that this man has rendered to this country as well as to his profession. It is a great pleasure for me to present a past president—no, rather, *the* past president of the American Medical Association, Elmer Henderson.

Address of the Past President, Dr. Elmer L. Henderson

Dr. Cline, Mr. Speaker, Members of the House of Delegates: This is somewhat of a surprise. I was not told about this. I must have gotten out of the Board of Trustees' meeting too early. I left before the meeting adjourned.

It is indeed a great pleasure for me to be able to be here with you today on this great occasion. I am especially happy because this session of the House of Delegates culminates much of the hard work which has been done during the past few years in behalf of the freedom of medicine. As Dr. Cline has stated, this work has not been done by any one man. It has been done by the rank and file of the medical profession of this great Republic. I think it certainly demonstrates the fact that our medical profession stands in a much better position than it did some few years ago, when today the President of the United States, Hon. Dwight D. Eisenhower, and Sen. Robert A. Taft came before this House of Delegates, the first time in the history of American medicine that a President of the United States has come before the House of Delegates. I think that should be proof to you that we have friends not only in the White House but in Congress, both in the Senate and the House. We have come a long way in the past year, and today we are asked to approve of not a full loaf, not what our goal has been for 79 years, but rather a half loaf. And, gentlemen, I am here to tell you that half a loaf is much better than what we have ever had before.

It would be impossible for me or anyone else to tell you of the difficulties that we have had during the past two administrations. You would not believe some of the things that had happened if you were told about them, but it has been very, very difficult indeed. I know that all of you know it has been difficult. Some of the scrapping that we have had with some of the government officials, especially our friend who formerly headed the Federal Security Agency, I am sure you are all familiar with. But those days are in the past. Now we do have an administration which is very friendly, from the top down, to the medical profession.

I wanted to go over to the White House yesterday afternoon. All I had to do was pick up the telephone and call up. I received a welcome. While I was there—Dr. George Lull happened to be with me—I was told they especially wanted me to go over and talk with Mrs. Hobby. I came back to the hotel and picked up Dr. Louis Bauer, Dr. Dwight Murray, Dr. R. B. Homan, and one or two others, and we went over to see Mrs. Hobby. The rest had seen Mrs. Hobby previously, on two different occasions, and they were very much impressed with her. This was after hours. The building was practically vacant, but she had all the time in the world to sit there and talk to us and tell us what she wanted to do. She is with the medical profession, and she wants to do what you and what I want done, and the only way that she can clean house over there is by getting this Reorganization Plan over. I think it is up to each and every one of us to get out and help do what we can to aid the Administration in aiding the freedom of this great Republic, not only in medicine but in every other line. We have been fighting these socializers for the past few years, and we have been fighting them hard. We have an opportunity now really to go forward and get rid of them, and it is up to us to do it.

As I say, I did not know that I was going to talk before you. I had intended to make a few remarks on this Reorganization Plan if it was felt necessary, but I am particularly happy to have the opportunity to stand before you this morning and thank you for the wonderful telegram that you sent me from Denver at a time when I was not feeling at all well. It only demonstrated to me that I still had many friends in the medical profession. I want to assure you that for the rest of my life I shall always remember the days that I have worked with you in American medicine; they have been the happiest days of my life. I know that you did not come here, were not called here today, to listen to me talk, so I shall cease at this time, and I thank you.

Report of the Board of Trustees on Reorganization Plan No. 1 of 1953

There was a brief recess during which copies of the Report of the Board of Trustees on Reorganization Plan No. 1 of 1953 were distributed and after which the meeting was called to order by the Speaker.

Dr. Dwight H. Murray, Chairman, presented the following Report of the Board of Trustees:

Mr. Speaker and Members of the House of Delegates: The House of Delegates of the American Medical Association has for nearly eighty years been on record as favoring an independent department of health in the federal government. The reason for this stand has been that the House has felt that health and medicine should be given a status commensurate with their dignity and importance in the lives of the American people, and that they should be completely divorced from any political considerations.

The Board of Trustees, after a careful study of the policy of the American Medical Association with respect to the administration of health activities in the executive branch of the government and after studying the Reorganization Plan for elevation of the Federal Security Agency to Cabinet status submitted by President Eisenhower to the Congress, finds that Reorganization Plan No. 1 of 1953 provides for a special assistant to the secretary for health and medical affairs. This provision is a

step in the right direction which should result in centralized coordination under a leader in the medical field of the health activities of the proposed department. Health, therefore, is given a special position. The proposed plan, properly administered, will permit more effective coordination and administration of the health activities of the new department without interference or control by other branches.

Previous attempts to raise the Federal Security Agency from an independent agency to the level of an executive department have been opposed by the Association because the plan did not meet these aims.

Inasmuch as federal health benefits and programs are established by the Congress, an administration bent on achieving the nationalization of medicine cannot reach that goal except with the support of Congress. Therefore, an organizational plan through which federal health activities are administered, although important, is not nearly so vital an issue as the policies adopted by the Congress of the United States.

The Board of Trustees recommends that the House of Delegates reaffirm its stand in favor of an independent Department of Health but that it support the Reorganization Plan No. 1 of 1953 as a step in the right direction, that the American Medical Association cooperate in making the plan successful, and that it watch its development with great care and interest.

It should be understood, however, that the Association reserves the right to make recommendations for amendment of the then existing law and to continue to press for the establishment of an independent department of health, if the present plan does not, after a sufficient length of time for development, result in proper advancement in and protection of health and medical science and in their freedom from political control.

Dr. Elmer Hess, Pennsylvania, moved that the Report of the Board of Trustees be adopted. The motion was seconded by several.

Dr. Robert B. Homan, Texas, moved, as a substitute, that the House recess until 2:00 p. m., in order that its members might have opportunity to study the question. The motion was seconded by Dr. James Z. Appel, Pennsylvania. The Speaker declared that a substitute motion to recess takes precedence and, by a rising vote of 84 to 58, the substitute motion was adopted. Before announcing the decision, the Speaker requested and received the consent of Drs. Homan and Appel, that the time for reconvening be changed to 1:30 p. m.

The House recessed at 12:00 noon.

Saturday Afternoon, March 14

The House reconvened at 1:30 p. m., with the Speaker, Dr. James R. Reuling, presiding.

The Speaker stated that the motion to recess at the morning meeting was erroneously called a substitute motion, that it was a high priority motion, which takes precedence over anything else, and that the interrupted motion or business is automatically taken up immediately after the meeting has reconvened. He declared that the duly seconded motion of Dr. Elmer Hess, Pennsylvania, to adopt the Report of the Board of Trustees was before the House.

Presentation from Hawaii

It was announced by the Speaker that the delegate from Hawaii, Dr. A. Leslie Vasconcellos, had been given permission by the Chair to make a presentation on behalf of the Hawaii Territorial Medical Association. The members of the Board of Trustees were called to the platform, and Mrs. Vasconcellos presented to each of them, with proper ceremony, an orchid lei.

Substitute Motion to Support the President's Reorganization Bill No. 1 of 1953

Dr. A. C. Scott, for the Texas delegation, moved, as a substitute for the motion before the House, that, in view of the present political situation in the United States and in the public interest, the House of Delegates of the American Medical Association support the President's Reorganization Plan No. 1 of 1953. The substitute motion was seconded by several and, after discussion by Drs. Thomas M. D'Angelo, New York, Elmer Hess, Pennsylvania, R. B. Homan, Texas, Dwight H. Murray, Chairman of the Board of Trustees, and the Speaker, was lost.

Action on Original Motion to Adopt Report of Board of Trustees

The question was called for, and the House of Delegates adopted the motion of Dr. Elmer Hess, Pennsylvania, to adopt the Report of the Board of Trustees.

Motion to Adopt Report of Board of Trustees Unanimously

Dr. Walter P. Anderton, New York, moved, and the motion was seconded by several, that the action of the House in adopting the Report of the Board of Trustees be made unanimous. The motion was discussed by Drs. Ralph A. Johnson and Wyman D. Barrett, Michigan, and R. B. Homan, Texas, after which the motion to adopt the Report of the Board of Trustees unanimously was carried.

Rising Vote of Thanks to Board of Trustees

On motion of Dr. Julian P. Price, South Carolina, the House of Delegates, by a rising vote of thanks, commended the Board of Trustees for the way in which it had handled this entire matter.

Remarks of the President, Dr. Louis H. Bauer

Dr. Louis H. Bauer, President, presented the following statement:

Mr. Speaker and Members of the House: I would just like to say that I think this House of Delegates has done the most constructive act that it has done in a long while. This may not work out entirely to our satisfaction, but I can assure you that the officers and Trustees of this Association will do their level best to see that it does work out, and, if it does not, we will come up with some other recommendation and try to make it satisfactory. It is an experiment, but it is a step of progress, and if I am not very much in error, I think you will find that the American Medical Association is going to get a lot of kudos for the action it has taken here today.

Remarks of Dr. Dwight H. Murray

Dr. Dwight H. Murray, Chairman, Board of Trustees, spoke to the House as follows:

Members of the House: Again I wish to express to you appreciation of the confidence that you have shown in the Board of Trustees, and I wish further to say to you that we are just now in a position really to start working toward something that will be constructive and worth while for American medicine. Heretofore, we had our heads against a stone wall and we could do nothing. All we could do was oppose some of the malignant things that were suggested by the government. Now we hope that we shall be able to get in and assist our government in getting some of the things accomplished that we would like to see done, and I assure you and I pledge to you, gentlemen, that the Board of Trustees will continue to follow that particular point to its completion in as nearly perfect form as is possible. We shall always be at the service of the House of Delegates and American medicine.

Vote of Thanks to President of the United States

On motion of Dr. Val H. Fuchs, Louisiana, seconded by Dr. Walter E. Vest, West Virginia, and carried by unanimous vote, the House of Delegates went on record thanking the President of the United States for his appearance before the House.

Vote of Thanks to Senator Taft and Congressman Judd

Dr. R. Stanley Kneeshaw, California, moved that the House of Delegates extend its thanks to Senator Robert A. Taft and Congressman Walter H. Judd for addressing the meeting. The motion was seconded by several and carried.

The House adjourned, sine die, at 2:10 p. m.

THE "DOCTOR-DRAFT LAW"

Following are a number of the inquiries most frequently received in these headquarters concerning the "Doctor-Draft law." The answers were prepared in the office of the Council on National Emergency Medical Service.

Question: What are the four priorities established by Public Law 779, 81st Congress, as amended? How many physicians are left in each one?

ANSWER: The four priorities established by Public Law 779 are as follows:

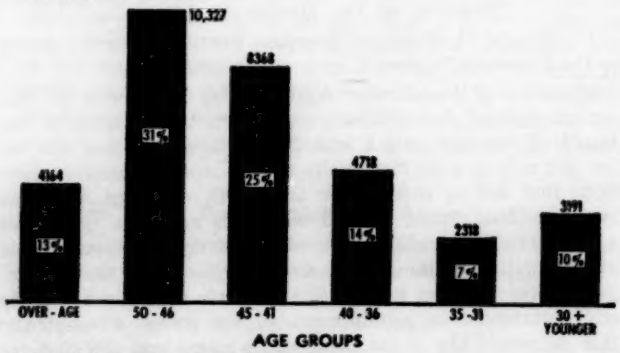
First Priority.—Those persons who participated as students in an Army Specialized Training Program or similar programs administered by the Navy and those persons who were deferred from service during World War II for the purpose of pursuing a course of medical instruction who have had less than 90 days of active service in any branch of the United States armed forces or the United States Public Health Service, subsequent to deferment or the completion of, or release from, the program or course of instruction.

Second Priority.—Same as the first priority, with the exception that these persons have had more than 90 days but less than 21 months of subsequent active service.

Third Priority.—Those who did not have active service in any branch of the armed forces of the United States or the United States Public Health Service subsequent to Sept. 16, 1940.

Fourth Priority.—Those not included in priorities 1 and 2, who had active service in any branch of the United States armed forces or the United States Public Health Service subsequent to Sept. 16, 1940. Priority 1 and 2 physicians, with few exceptions, have been called into service. Priority 3 physicians will be called, beginning in April. Physicians in priority 4 will be called according to the length of their previous service when the first three priorities are exhausted. The following charts indicate a breakdown of priority 3 physicians by age groups and priority 4 physicians by length of service.

PRIORITY 3 PHYSICIAN REGISTRANTS
By age groups, in 1953*



*Includes the 33,086 registrants as of November 30, 1952

Question: What are the Medical Advisory Committees, and are their recommendations final?

ANSWER: Public Law 779 authorized the establishment of a National Medical Advisory Committee to the Selective Service System, as well as state and local advisory committees. These committees assist the local, state, and national Selective Service authorities in administering the "Doctor-Draft law." Their recommendations are merely advisory in nature and can be accepted or rejected by Selective Service Boards.

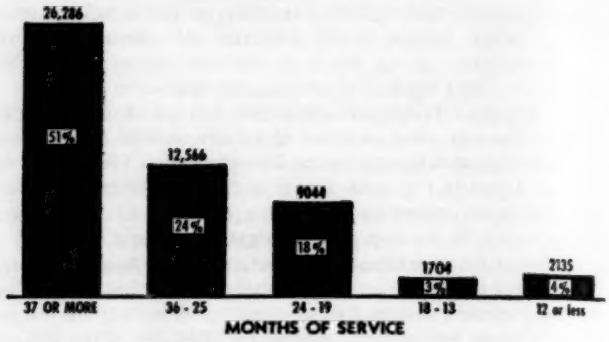
Question: What is the specified length of service under Public Law 779, as amended?

ANSWER: Public Law 779, as originally enacted, required 21 months of service. The law was amended by Public Law 51, 82d Congress, which extended the required period of service to 24 months.

Question: At what rate are physicians being called into service?

ANSWER: The latest estimates furnished by the Department of Defense indicate that an average of 5,000 physicians per year will be required during the next five years. In a press conference held by the President on Feb. 25, it was announced that the quarterly quota of physicians for the second quarter of 1953 had been reduced from 1,800 to 1,200. This was made possible by a reduction in the ratio of physicians to troop strength from 3.7 per thousand to 3.0 per thousand.

PRIORITY 4 PHYSICIAN REGISTRANTS
By Months of Military Service*



*Includes the 51,735 registrants as of November 30, 1952

Question: Are physicians inducted into service before they complete their internship?

ANSWER: Physicians are not called under the "Doctor-Draft law" until after they have completed internship training.

Question: Are drafted physicians utilized in a professional capacity or are they given other assignments?

ANSWER: Until recently the armed services have contended that they may use drafted physicians in any manner they see fit. In arguing the case of Orloff vs. Willoughby before the United States Supreme Court, however, the attorneys for the government conceded that a physician called into service pursuant to the "Doctor-Draft law" must be utilized in a professional capacity.

Question: Can permanent deferments be granted for other than physical reasons?

ANSWER: The Selective Service System and the Medical Advisory Committees have adopted a practice of allowing deferments for only six month periods. This necessitates a review and reconsideration of the status of individual physicians every six months.

Question: Does the American Medical Association have any authority in the administration of the "Doctor-Draft law"?

ANSWER: None whatsoever. The "Doctor-Draft law," which is an amendment to the Universal Military Training and Service Act, as amended, is administered by the Selective Service System in accordance with rules and regulations prescribed by the President.

Question: Does the American Medical Association recommend deferments on the grounds of "essentiality?"

ANSWER: The American Medical Association does not have any authority in connection with determinations of essentiality. These determinations are made by local Selective Service boards with the assistance of local and state medical advisory committees.

After studying the bill prepared by the Department of Defense to extend the "Doctor-Draft law" beyond July 1, 1953, the Council on National Emergency Medical Service has recommended a continuation of the present concept of deferring physicians regardless of their priority classification if they are determined to be essential in their present assignment to the national safety, health, or interest.

Question: Will a physician called into service just prior to his 51st birthday be discharged on reaching that age?

ANSWER: The "Doctor-Draft law" provides that no physician shall be inducted into the armed forces after he has attained age 51; however, once he is inducted into the service, there is no provision in the law that would authorize his discharge on attaining age 51.

Question: Did the American Medical Association suggest the present priority system?

ANSWER: In August, 1950, at the time of the congressional hearings on Public Law 779, 81st Congress, representatives of the American Medical Association testified in favor of a different priority system. Notwithstanding this testimony, the Congress, as is its prerogative, selected the present system. One of the recommendations of the American Medical Association was that present priorities 2 and 3 be reversed.

Question: Does the American Medical Association believe that any distinction should be made between service during World War II and service since June 25, 1950?

ANSWER: On Feb. 7, 1953, the Board of Trustees accepted certain recommendations of the Council on National Emergency Medical Service relative to the proposed extension of the "Doctor-Draft law." These recommendations provided in part that no distinction should be made between service since Sept. 16, 1940, in World War II and service since June 25, 1950. It is the belief of the Association that any service since Sept. 16, 1940, either as an enlisted man or an officer, with the exception of time spent in a Navy V-12 or Army Specialized Training Program, should be included.

Question: What are the priority groups recommended by the American Medical Association for inclusion in the proposed extension of the "Doctor-Draft law"?

ANSWER: The Board of Trustees has recommended that, inasmuch as registrants in priorities 1 and 2 will be exhausted by July 1, 1953, two groups be established. First, physicians with no previous military service to be called according to age—youngest men first. Second, physicians with military service since Sept. 16, 1940, to be called according to the amount of their service—those with the least amount of service first. It has further been recommended that physicians now classified in priorities 1 and 2 be called into service when their temporary deferments expire.

RURAL HEALTH—TOPIC OF NEXT "MEDICINE, USA" SHOW

Starring H. V. Kaltenborn, "Medicine, USA"—a new health education radio series—this week records how a number of rural communities throughout the country have solved their health problems. Presented by the American Medical Association and county medical societies in cooperation with the National Broadcasting Company, the program will be broadcast from 8:30 to 9 p. m., EST, Saturday, April 4, over the NBC radio network. The "Rural Health" program will include dramatizations as well as interviews with persons who took part in each project.

Future subjects in the six-program dramatic series are "Problems of Deafness," starring Kim Hunter, April 11; "Arthritis," with Robert Preston, April 18; and "Fight Against Pain," with Helen Hayes, April 25. All programs, except the last, will originate from New York at 8:30 p. m., EST. The April 25 show will be broadcast from Chicago.

The first two half-hour programs of the series were "Grow Young Along with Me," featuring Pat O'Brien, March 21, and "Gifted Children," with Claude Raines, March 28. Ben Grauer acts as narrator for the series. Medical commentary is supplied by W. W. Bauer, M.D., Director of the Bureau of Health Education. Original music for the programs was composed by Charles Paul.

The series should have wide popular appeal, since the programs deal with six fields of medicine in which great strides have been made in recent years. Medical societies should continue local promotion, either by encouraging local stations to carry the programs or by suggesting that the series be recorded off the network for broadcast at a later date.

FEDERAL MEDICAL LEGISLATION

Income Tax Exemption for Permanently Handicapped Dependents

Congressman Dollinger (D., N. Y.), in H. R. 3891, would amend the Internal Revenue Code to provide an additional exemption of $600 for each permanently handicapped dependent of a taxpayer. A permanently handicapped person is defined, but the method of such determination is not given. This measure was referred to the Ways and Means Committee.

Medical Expense Deductions

Congressman Selden (D., Ala.), in H. R. 3779, and Congressman Oliver P. Bolton (R., Ohio), in H. R. 3911, would amend the income tax law to remove the 5% limitation on taxable income beyond which medical expenses may be deducted up to $1,250 for each taxpayer and the same amount for his dependents, but not to exceed $2,500. The Bolton bill removes the dollar limitations. Similar bills have been previously reported: H. R. 3375 (Matthews, D., Fla.), H. R. 3434 (Young, R., Nev.), and H. R. 2243 (Dague, R., Pa.). These measures were referred to the Ways and Means Committee.

Total Disability Benefits Under OASI

Congressman Perkins (D., Ky.), in H. R. 3777, would provide disability insurance benefits at the same rate as OASI retirement benefits for all totally disabled persons even though they may not have attained retirement age. The Federal Security Administrator would provide for the determinations of such disability and for reexaminations. Persons refusing to submit to examinations or rehabilitation without due cause would forfeit those benefits. This bill was referred to the Ways and Means Committee.

Right to Select Physician Under Longshoremen's and Harborworkers' Compensation Act

Under the present Longshoremen's and Harborworkers' Act, the employer is required to furnish medical care, nurse and hospital service, and appliances for injured employees. Congressman Radwan (R., N. Y.), in H. R. 3930, proposes that the employees be protected in their right to select their own physicians and hospitals. This measure was referred to the Education and Labor Committee.

Federal Aid to Nursing Education

Congresswoman Frances P. Bolton (R., Ohio) proposes, in H. R. 3850, a three year program of federal aid to nursing education, including practical nurse training. The Surgeon General of the Public Health Service would make the regulations for the graduate nurse program. The Commissioner of Education would have a similar role in practical nurse education. Funds could be used for instruction, scholarships, administrative expenses of the states, and for recruiting students. To participate in any graduate program, a state must designate a state board of nurse examiners as the sole agency for administration and provide a state advisory council, a majority of which must be nurses. The allotment of funds to the states would be controlled by the number of newly enrolled nurse trainees. The state board of vocational rehabilitation would administer the practical nurse program. This measure was referred to the Interstate and Foreign Commerce Committee.

STATE MEDICAL LEGISLATION

Arkansas

Bill Enacted.—H. 190, has become act no. 120 of the acts of 1953. It provides that each applicant for a marriage license shall present a **certificate from a licensed physician** stating that the applicant has undergone a physical examination and has been found, in the opinion of the physician, not to be infected with syphilis in a communicable stage.

California

Bill Introduced.—S. 1437, to amend the law relating to **narcotic prescriptions,** proposes that prescriptions containing a certain amount of codeine or opium may be given orally but must be put in writing within 24 hours by the pharmacist.

The summary of federal legislation was prepared by the Washington Office of the American Medical Association and the summary of state legislation by the Bureau of Legal Medicine and Legislation.

Colorado

Bill Introduced.—H. 267, proposes regulations for the examination and licensing of **dispensing opticians.**

Idaho

Bills Enacted.—H. 268, has become Ch. 271 of the laws of 1953. This is a uniform act regulating traffic on the highways and it provides, among other things, for the admissibility in evidence of **chemical tests for intoxication.** S. 179, has become ch. 240 of the laws of 1953. It provides for the creation of a committee to study and investigate the cost and effectiveness of the various **medical care programs** now being conducted in the state of Idaho and to make recommendations relative thereto.

Indiana

Bills Enacted.—H. 189, has become ch. 230 of the laws of 1953. It provides for the creation of county mental health clinic board to operate **mental health clinics** in the counties of the state. S. 38, has become ch. 194 of the laws of 1953. It provides for the creation of a **commission on alcoholism** to develop and carry on a program for the rehabilitation of alcoholics through the use of clinical, psychiatric, and other forms of treatment of chronic alcoholics.

Kansas

Bill Introduced.—S. 287, proposes that no person, who, while a patient at any state hospital, receives **psychiatric shock treatment,** and as a result thereof suffers physical or mental injury or death, nor the personal representatives or guardian of any such person, shall thereafter have a cause of action for damages against any officer, employee, physician, or technician of such hospital unless injury or death shall have resulted from the gross and wanton negligence of such officer, employee, physician, or technician giving or supervising the giving of such shock treatment.

Massachusetts

Bills Introduced.—H. 2378 proposes the creation of a special commission to make an investigation and study relative to certain **epileptic employees** sustaining personal injuries within the state. S. 606, proposes to require the **biennial registration of physicians.**

Michigan

Bill Introduced.—S. 1186, proposes to authorize county social welfare boards to supervise and be responsible for the operation of county medical care facilities. Such facilities would provide a program of medical treatment and nursing care under the general direction and supervision of a licensed physician known as the medical director.

Minnesota

Bills Introduced.—H. 1403, proposes to authorize school boards to hire, at the expense of the school district, **a school dentist** to give dental care and treatment to school students. H. 1486, proposes the creation and establishment of a **medical policy directional committee** of mental health to advise relating to all phases of professional standards including patient care, training of personnel, establishment of treatment programs, obtaining adequate staff, establishment of medical and statistical records, and operation of practices in order that they may be compatible with professional requirements. S. 1216, proposes that all information procured by or filed with the state board of health in connection with studies conducted by the board or carried on by the board jointly with other persons or agencies shall be confidential and shall be used solely for the purposes of **medical or scientific research.**

Nebraska

Bill Enacted.—L. B. 68, was approved March 10, 1953. It provides for the appointment by the governor of a **state board of health,** at least two members of which shall at all times be members of the Nebraska State Medical Association.

Nevada

Bill Introduced.—A. 418, proposes the creation of a **medical advisory board** consisting of three physicians holding degrees of doctor of medicine and duly licensed to practice medicine in the state. The advisory board would advise and assist the superintendent of the state hospital in carrying out the medical policies of the hospital.

New Jersey

Bills Introduced.—A. 526, proposes that every physician shall, within twenty-four hours after determining that any person is suffering from a **heart condition or other physical and mental condition** which is likely to recur without warning and which may be the cause of a motor vehicle accident, while the person suffering from the same is operating a motor vehicle, report such determination to the director of the division of motor vehicles. S. 228, proposes to authorize **licensed chiropodists** to certify their claims to medical service corporation and receive payment therefor to the same extent as licensed physicians and surgeons.

New York

Bills Enacted.—A. 894, has become ch. 116 of the laws of 1953. It authorizes under certain conditions the waiver of **citizenship requirements** with respect to applicants for competitive examinations **for** certain positions requiring **full-time physicians** in city or county laboratories. S. 569, has become ch. 95 of the laws of 1953. It proposes that any reputable physician, duly licensed to practice medicine in the state, who has been in the actual practice of his profession for at least three years shall be eligible to become a **certified examiner** for the purpose of taking examinations under the mental hygiene law.

North Carolina

Bill Introduced.—S. 286, proposes to authorize the commission to arrange for the examination of the eyes of its beneficiaries and may secure and pay for optometric services for such persons whenever in the judgment of a qualified **ophthalmologist or optometrist** the eyes of such person or persons may be benefited thereby.

North Dakota

Bills Enacted.—H. 803, was approved March 19, 1953. It makes it unlawful for any employer to require an employee or prospective employee to take **a medical examination** or to furnish any medical records as a condition of employment at his or her own expense. S. C. R. "G," was filed March 7, 1953. It requests the board of administration to take such action as may be necessary to provide treatment at penal and correctional institutions for alcoholism and mental adjustments.

Ohio

Bills Introduced.—H. 63, proposes the establishment of a **division of alcoholism** to promote or conduct studies on alcoholism and to establish and operate facilities for the treatment, rehabilitation, and care of alcoholics. H. 257, to amend the Food, Drug and Cosmetic Act, proposes, among other things, if a drug is sold at retail and contains any quantity of aminopyrine, **barbituric acid,** cinchophen, dinitrophenol, sulfanilamide, or their derivatives it will be deemed misbranded unless sold on written prescription of a member of the medical, dental or veterinary profession licensed by law to administer such drug. H. 430, proposes to authorize the use in court of **chemical tests for intoxication.** It also proposes that any person who operates a motor vehicle shall be deemed to have given his consent to a chemical test of his breath, blood, urine, or saliva for the purpose of determining the alcoholic content of his blood. If he then refuses to submit to such test, the test would not be given but the person's drivers license would be revoked.

Oklahoma

Bills Introduced.—H. 998, proposes that every person who wilfully, by any means whatever, **assists any patient** of any state mental institution **to escape** therefrom is guilty of a felony. S. 313, proposes that any person who continuously shall have been a patient of one or more institutions or hospitals for the cure or treatment of mental illness or defectiveness for a period of more than seven years shall be **presumed to be incurably insane.**

Bill Enacted.—H. 575, was approved March 2, 1953. It includes **amphetamine** within the law relating to the sale of barbituric acid on prescription.

Oregon

Bills Enacted.—H. 55, has become ch. 64 of the laws of 1953. It provides, among other things, that no person, being requested by means of a prescription or otherwise to sell, furnish, or compound any drug, medicine, chemical, or pharmaceutical preparation shall **substitute** or cause to be substituted therefor without notification to the prescriber or purchaser, any other **drug, medicine, chemical, or pharmaceutical preparation.** S. 271, has become ch. 103 of the laws of 1953. It provides certain circumstances under which applicants for licenses by state agencies may be examined prior to completing their formal educational requirements, the principal condition being that the applicants will probably be called into service with the armed forces within a period of six months from the date of examination and before the date of the next regularly scheduled examination.

Pennsylvania

Bills Introduced.—S. 232, proposes an appropriation to the trustees of the University of Pittsburgh for the general maintenance of the **school of medicine.** S. 269, proposes to authorize the sale of **sulfanilamide** on oral prescription. S. 270, proposes to authorize the sale of **hyponotic analgesic drugs** on oral prescription. S. 274, proposes the creation of a board of trustees of the State Fund for Inebriates which board shall **study the problem of alcoholism** including methods and facilities available for the care, custody, detention, treatment, employment, and rehabilitation of persons addicted to the intemperate use of spirituous or intoxicating liquors. S. 290, proposes the creation of a **state board of practical nurse examiners** to examine and regulate practical nurses in the state.

Rhode Island

Bill Introduced.—H. 743, relating to the qualifications which an applicant for the right to take the **basic science examination must show,** proposes to grant certain credits to those applicants who have served at least one year as a physician or petty officer in the medical corps of the armed forces of the United States and shall have completed two years' professional training.

Bill Enacted.—S. 11, was approved March 16, 1953. It amends the law relating to **narcotic drugs** by providing that any violation **involving a person under the age of 21** years shall be punished by up to life imprisonment if the offense is a second or subsequent one.

Washington

Bills Enacted.—H. 135, was approved March 17, 1953. It makes it unlawful for any person to use or **administer by hypodermic** or otherwise any narcotic drug except as prescribed and under the direction of a physician authorized by law to practice medicine in the state. The unlawful possession of narcotic drugs shall be prima facie evidence of an intent to illegally use such drugs. H. 258, was approved March 17, 1953. It requires **drugless practitioners** to renew their licenses annually.

MEDICAL NEWS

ALABAMA

State Medical Meeting at Birmingham.—The annual session of the Medical Association of the State of Alabama will be held at the Thomas Jefferson Hotel, Birmingham, April 16-18 under the presidency of Dr. Benjamin W. McNease, Fayette. Out-of-state speakers include:

Evaluation and General Management of Patients with Hypertension, Eugene B. Ferris, Atlanta.
Diseases Affecting the Superior Vena Cava System, J. Ross Veal, Washington, D. C.
Use and Abuse of Estrogen Therapy, Robert A. Kimbrough Jr., Philadelphia.
Report on 13 Years' Experience with the Doctor-Sponsored Blue Shield Movement, Robert L. Novy, Detroit.

On Friday morning Dr. Champ Lyons, professor of surgery, Medical College of Alabama, Birmingham, will deliver the Jerome Cochran lecture on "Metabolic Aspects of Convalescence," after which certificates of distinction will be awarded to members of the 50 Year Club, Class of 1953.

The Vanderbilt Medical Alumni luncheon will be held at 12:45 p. m., Friday, at the Thomas Jefferson Hotel. All interested should contact Dr. Samuel E. Upchurch, 2030-11th Ave. S., Birmingham. The Alabama Orthopaedic Society's annual meeting will be held at the Thomas Jefferson Hotel, April 15, 3-5 p. m. The Woman's Auxiliary will meet at the Tutwiler Hotel, Birmingham, April 16-17.

CONNECTICUT

Society News.—On April 6 Dr. John H. Garlock, New York, will address the Hartford Medical Society at 8:30 p. m. in the Hunt Memorial Building, on "Surgery for Peptic Ulcer, With or Without Vagotomy." The April 20 meeting will be addressed by Dr. Harold J. Jeghers, Washington, D. C., who will discuss "Differential Diagnosis of Jaundice and Application of Liver Function Tests."

Fund for Research in Psychiatry.—Yale University announces receipt of a gift of 6 million dollars from the Social Research Foundation, for establishment of the foundation's Fund for Research in Psychiatry. The fund will be administered by a board of directors, including Dr. Frederick C. Redlich, professor of psychiatry, chairman; Dr. Vernon W. Lippard, dean of Yale University School of Medicine; Dr. Charles D. Aring, University of Cincinnati College of Medicine; Dr. George W. Thorn, Harvard Medical School, Boston; and Dr. John C. Whitehorn, Johns Hopkins University School of Medicine, Baltimore. The fund will provide assistance for basic research in psychiatry and related behavioral sciences to Yale and other universities.

ILLINOIS

Public Health Conference.—The annual conference of the Illinois Public Health Association will be held April 9-10 at the Congress Hotel, Chicago. Physicians participating in the program include: Jackson P. Birge, Rock Island, Herman N. Bundesen, Chicago, L. E. Burney, Indianapolis, Roland R. Cross, Springfield, Donald A. Dukelow, Chicago, Carroll F. Leonard, East St. Louis, Thomas W. Lester Jr., Chicago, Kenneth S. Nolan, Chicago, and Leonard M. Schuman, Springfield. The president's reception in the English Walnut Room (6 p. m.) will be followed by a banquet in the Gold Room, which will be addressed by Tony Weitzel, "The Town Crier," news columnist, on "The Chicago Virus."

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education and public health. Programs should be received at least three weeks before the date of meeting.

Chicago

Cardiac Conference.—The Cardiovascular Committee of Cook County Hospital will hold a cardiac conference April 10, 11 a. m. to 12 noon, at the Children's Amphitheater, 700 S. Wood St. Dr. Richard J. Bing, professor of experimental medicine and clinical physiology, Medical College of Alabama, Birmingham, will speak on "The Metabolism of the Human Heart in Vivo."

Papers by Pediatric Residents and Interns.—The Chicago Pediatric Society will present a program April 21, consisting of papers by pediatric residents and interns. About $250 will be distributed equally among the participants. Applicants should consult the head of the department of pediatrics of their medical school or hospital. For information phone Dr. Matthew M. Steiner, Secretary of the Chicago Pediatric Society, AMbassador 2-5271.

Oppenheim Memorial Lectureship.—The fourth annual Maurice Oppenheim memorial lectureship, established at the Chicago Medical School by Alpha Rho chapter of Phi Lambda Kappa, will be delivered at Kling Auditorium, Mt. Sinai Hospital, April 10, 12:30 p. m. by Dr. Sidney Farber, director of research, Children's Cancer Research Foundation of Boston, who will speak on "Nature and Treatment of Certain Lipid Metabolic and Related Disorders."

Demonstration of Cardiac Diets.—The Chicago Heart Association, in cooperation with the Chicago Dietetic Association and the Chicago Home Economists in Business, will present four talks on diets for patients with heart disease, including demonstrations in preparing low sodium diets and low calorie diets, in the auditorium of the Peoples Gas Light and Coke Company, 122 S. Michigan Ave., April 6, 13, 20, and 27 at 2 p. m. Any patient (or member of his or her family who prepares the meals) is welcome if referred by a physician. Dietitians and nutritionists are also cordially invited.

MICHIGAN

Progress Against Tuberculosis.—Dr. Albert E. Heustis, Lansing, state health commissioner, reports that the death rate from tuberculosis in 1952 was the lowest in Michigan history, provisional figures showing less than 12 tuberculosis deaths among every 100,000 residents. In 1951, tuberculosis claimed the lives of nearly 18 of every 100,000 persons; 25 years ago it took the lives of 66 of every 100,000; and in 1900 the rate was 103.

Annual Cancer Program.—The Genesee County Medical Society will present the annual Cancer Day Program at Hurley Hospital in Flint, April 8. Dr. Leroy W. Hull, Detroit, president, Michigan State Medical Society, will preside at the morning session, and Dr. Archibald C. Pfeifer, Mount Morris, president-elect, Genesee County Medical Society, will introduce the following program:

Cancer of the Pancreas and Biliary Tract, Richard B. Cattell, Boston.
Differential Diagnosis and Treatment of Cancer of the Ovary, Emil Novak, Baltimore.
Leukemia, Hodgkin's Disease, and Allied Disorders, Cyrus C. Sturgis, Ann Arbor, Mich.

Dr. Clifford H. Keene, Ann Arbor, co-chairman, Cancer Control Committee, Michigan State Medical Society, will preside during the afternoon session, which will include presentation of "The Management of Pain Problems Related to Cancer" by Dr. Frank H. Mayfield, assistant professor of surgery, University of Cincinnati College of Medicine, and "Use of Radioactive Isotopes in Clinical Aspects of Cancer" by Dr. Richard H. Chamberlain, associate professor of radiology in charge of radiotherapy, University of Pennsylvania School of Medicine, Philadelphia. A panel discussion on "Palliation and Terminal Care of Cancer Patients," concluding the scientific

session, will have Dr. Charles S. Kennedy, emeritus professor of surgery, Wayne University College of Medicine, Detroit, as moderator. A social hour will be followed by a subscription dinner at 7 p. m. at the Elks Club.

MINNESOTA

Physicians' Art and Hobby Show.—This show will be presented during the 100th annual session of the Minnesota State Medical Association in St. Paul, May 18-20. Entry blanks, which must be returned by April 15, may be obtained from the Minnesota State Medical Association, 496 Lowry Medical Arts Building, St. Paul 2, or from Dr. James L. Benepe, Chairman, 214 Lowry Medical Arts Building.

Course in Gynecology.—A continuation course in gynecology, originally announced for December, 1952, will be presented under the direction of Dr. John L. McKelvey, professor of obstetrics and gynecology, by the University of Minnesota Medical School, Minneapolis, April 16-18 at the Center for Continuation Study on the University Campus. Subjects to be considered will include endometriosis, culdoscopy as a diagnostic tool, and gynecologic malignancy including the question of carcinoma in situ.

Dr. Watson Retires.—Dr. Percey T. Watson, Minneapolis, has retired after serving in the Minnesota Department of Health for 17 years and in China for the preceding 27 years, where he was a missionary physician. During his first year in China he secured funds for building and training a Chinese medical staff. He organized expeditions to stop epidemics of plague and in 1928 published "Rules for Suppression of Bubonic and Pneumonic Plague." Six medals have been awarded him by the Chinese government. Since his return from China he has served as director of the Chippewa Indian Health Unit, District Health Unit 1, and the health department's division of local health services. Two of Dr. Watson's children are physicians: Dr. Theodore Watson, St. Paul, and Dr. R. Janet Watson, Brooklyn.

MISSOURI

Public Meeting on Skin Cancer.—On April 9 at 8 p. m. the St. Louis Medical Society will present in its auditorium (3839 Lindell Blvd.) the St. Louis Medical Forum, a public meeting, on "Cancer of the Skin."

Memorial Lecture.—The third annual memorial lecture at the Menorah Medical Center in Kansas City will be presented at 8 p. m., April 6, by Dr. James C. White, associate professor of surgery, Harvard Medical School, Boston. The profession is invited to hear his discussion on "Surgery of the Autonomic Nervous System, Its Indications and Limitations."

Clinical Session.—The St. Joseph Clinical Society will meet April 9 at the Hotel Robidoux, St. Joseph. Luncheon will precede the following program:

William R. Kirtley, Indianapolis, Recent Investigations of New Insulin Preparations.
Robert C. Hardin, Iowa City, Blood Transfusions.
William W. L. Glenn, New Haven, Conn., Some Considerations of Cardiac Surgery with Special Reference to the Intracardiac Procedures.
William H. Bickel, Rochester, Minn., Surgical Treatment of Arthritis of the Hips.

In the evening Dr. Henry G. Schwartz, St. Louis, will speak on "The Gamut of Neurosurgery," and Dr. Terry E. Lilly Jr., Kansas City, Mo., will present "The Physician's Responsibility in Cancer Detection." Credit for attendance is given by the Academy of General Practice. No registration fee.

NEBRASKA

Camp for Diabetic Children.—Springdale Camp at Camp Catron near Nebraska City will be open June 7-20 for diabetic children of Nebraska and a number of young diabetics from other states. Application should be made to Miss Anna Smrha, State Department of Health, Capitol Building, Lincoln. Fee, $50 for two weeks, plus a nominal charge for activity material; the fee may be waived, however, if the child is unable to pay.

The Annual Creighton Assembly.—The annual postgraduate assembly of the Creighton University School of Medicine, Omaha, will be held April 16-18, the meeting convening for the first two days at St. Catherine's Hospital and on the final day at the school of medicine. The guest speakers, all alumni of the school, will be Drs. Hugh F. Fitzpatrick, New York, Clarence S. Moran, Mitchell, S. D., and Sylvester N. Berens, Seattle. On Thursday at 10:45 a. m. Dr. Fitzpatrick will speak on "Portal Hypertension" and at 3:15 p. m. on "Surgery in Acquired and Congenital Cardiovascular Diseases." Friday at 10:45 a. m. Dr. Moran will discuss "The Anemias," and at 3:15 p. m. Dr. Berens will present "Management of Head Injuries." The Friday afternoon session will end with a clinical conference at 3:45, at which Dr. Frank T. Hamilton, Friend, will be moderator, and Drs. Maurice C. Howard and Clifford H. Hansen, both of Omaha, will speak on medicine; Drs. John P. Cogley, Council Bluffs, Iowa, and Harry H. McCarthy, Omaha, on surgery; and Dr. Arnold Dowell on radiology. There will be a cocktail party Friday (6:30-8:30 p. m.) at the Blackstone Hotel, courtesy of Omaha alumni. Dr. Adolph Sachs, Omaha, will preside at the round-table luncheon on Thursday and Dr. Howard at the luncheon on Friday. On Saturday at 7 p. m. the Creighton Jubilee dinner dance will be held at the gymnasium. Members of the class of 1928, including Drs. Berens and Moran, will be honored at the Jubilee dinner, which commemorates the 75th anniversary of Creighton University.

NEW HAMPSHIRE

Rehabilitation Center Opened.—Under the sponsorship of the New Hampshire Society of Crippled Children and Handicapped Persons, the $1 million Crotched Mountain Rehabilitation Center was recently opened at Greenfield. At the outset, priority will be given to New Hampshire children who are unable to pay. Those living outside the state will pay, although when funds are available the center hopes to extend free service to them. The present bed capacity is for 40 children.

NEW JERSEY

Symposium on Industrial Dermatology.—The New Jersey Dermatological Society will present a symposium on the medical and legal aspects of industrial dermatology at 8 p. m., April 8, at the Academy of Medicine, 91 Lincoln Park South, Newark. Mr. Daniel A. Spair, director, New Jersey Workman's Compensation Bureau, will serve as moderator for the following program:

Bart M. James, Newark, Illustrated Discussion of Occupational Skin Diseases.
Louis Tulipan, New York, Criteria for the Diagnosis of Occupational Dermatitis.
Mr. Alexander Avidan, The Viewpoint of the Petitioner.
Mr. Arthur F. Mead, The Viewpoint of the Employer.
Mr. Harry S. Medinets, The Viewpoint of the State.

NEW YORK

Fellowships in Cancer Diagnosis.—The Medical Society of the State of New York, the state health department, and the New York City Health Department, will provide a number of fellowships for New York State physicians interested in a course in cancer diagnosis to be presented by the Columbia University Faculty of Medicine, April 20 to May 2 (fee, $100). The course is primarily designed for staff members of general hospitals and tumor clinic directors. Application forms may be obtained from the Bureau of Cancer Control, New York State Department of Health, 39 Columbia St., Albany; Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32; or the Memorial Center for Cancer and Allied Diseases, 444 E. 68th St., New York 21.

Medical Director Wanted.—The superintendent of schools of the City of New York will consider applications for the part-time position (15 hours per week) of chief medical director (salary $9,050 a year), which is open to men and women (maximum age, 50). Candidate should be a graduate of an approved medical school, licensed to practice medicine in New York and certified as a diplomate of the American Board of Internal Medicine. Requirements include 10 years of appropri-

ate experience in the practice of medicine, 9 months of which shall have been an internship in an A. M. A.-approved hospital, said experience to include or be supplemented by 2 years of administrative and supervisory experience. Application forms, which may be obtained from Jacob Greenberg, Associate Superintendent in Charge of Personnel, Rm. 510, 110 Livingston St., Brooklyn 1, New York, must be filed before June 15. Questions regarding eligibility should be addressed to Arthur Klein, Examiner-in-Charge, Board of Examiners, at the same address.

Cancer Teaching Program.—Albany Medical College, Albany County Medical Society, New York State Division of Cancer Control, and the Medical Society of the State of New York will sponsor a cancer teaching session, April 16-17 (originally scheduled for April 9-10) in Huyck Auditorium, Albany Medical College. On Thursday morning there will be a discussion of "Newer Methods of Treatment of Cancer." Preoperative and postoperative care will be discussed during the afternoon session, which will start at 2 p. m. The evening session on psychiatric problems, which will begin at 8 p. m., will include presentations by Dr. Guy F. Robbins, Memorial Center for Cancer and Allied Diseases, New York, "Early Diagnosis-Culpability"; Dr. Jacob E. Finesinger, University of Maryland School of Medicine, Baltimore, "Problems of Patient"; and Dr. Arthur Sutherland, Memorial Center for Cancer and Allied Diseases, New York, "Postoperative Problems, Rehabilitation." The Friday session will be held at the VA Hospital, Albany, where "Soft Tissue Tumors" will be the morning topic, and "Carcinoma of the Cervix" the topic of the afternoon meeting.

New York City

Cancer Meeting.—The New York Cancer Society will meet April 7 at 8:30 p. m. at the New York Academy of Medicine (5th Avenue at 103rd Street) for the following program:

Relation of Carcinoma-In-Situ to Invasive Cancer of the Cervix, Richard W. TeLinde, Baltimore.
Experience with Carcinoma-In-Situ, Edgar R. Pund, Augusta, Ga.
Radiosensitivity and Cytology, Mrs. Ruth M. Graham, Boston.

Discussants will be Drs. Arthur P. Stout and Howard C. Taylor, New York, and Dr. Lauren V. Ackerman, St. Louis. Physicians and medical students are cordially invited.

Radio Programs.—On April 9 the New York Academy of Medicine will present the following lectures on its FM postgraduate radio program:

Medical Management of Acute and Chronic Arterial Occlusion, A. Wilbur Duryee.
Skin Cancer, Anthony C. Cipollaro.

On April 16 the program will be as follows:

Halsted, Man and Surgeon, Bertram M. Bernheim, Baltimore.
William H. Halsted, the Surgeon's Preceptor, John J. Moorhead.
Cancer of the Breast, William C. White.

Personal.—In recognition of his contributions in the field of biochemistry, Dr. Heinrich B. Waelsch, principal research scientist in pharmacology at the New York State Psychiatric Institute, was awarded the Carl Neuberg medal for 1953 at the annual meeting of the American Society of European Chemists and Pharmacists.——Dr. Harold H. Golz has been named an assistant medical director of the American Cyanamid Company. Dr. Golz was formerly chief of the medical service and chief of staff for the Arabian American Oil Company in Saudi Arabia. ——Dr. Cornelius H. Traeger has resigned as medical director of the National Multiple Sclerosis Society but will serve as consultant medical director. Dr. Harold R. Wainerdi, who has been associate medical director for the past two and a half years, has been appointed acting medical director.——Dr. Robert S. Wilkinson Jr., who has been affiliated with the department of surgery at the Harlem Hospital since 1929, has been appointed a police surgeon.——Dr. Jerome S. Peterson, who since 1949 has directed health services for Palestine refugees in Lebanon, Syria, Jordan, the Gaza area, and Israel, has been appointed director of the Division of Public Health Services at the Geneva (Switzerland) headquarters of the World Health Organization. ——Dr. E. Gurney Clark, professor of epidemiology, Columbia University College of Physicians and Surgeons, has been appointed medical consultant to the American Social Hygiene Association. Dr. Clark, who is now serving as visiting professor in the department of dermatology and syphilology at the University of Oslo School of Medicine in Norway, was formerly affiliated with Vanderbilt University Hospital, Nashville, Tenn., Johns Hopkins University School of Medicine, Baltimore, and Washington University School of Medicine, St. Louis.

OHIO

Public Health Meeting.—The Ohio Public Health Association will hold its annual meeting at the Southern Hotel, Columbus, April 9-10. Dr. W. W. Bauer, Chicago, Director of the A. M. A. Bureau of Health Education and Editor of *Today's Health*, will address the meeting, as will C.-E. A. Winslow, Dr.P.H., New Haven, Conn., editor of the *American Journal of Public Health*.

PENNSYLVANIA

Graduate Spring Institute.—The Dauphin County Medical Society and the Medical Society of the State of Pennsylvania will sponsor a Graduate Education Institute at the Harrisburg Academy of Medicine (Fourth and Seneca Streets). Lectures on allergy will be given from 9:30 a. m. to 12 noon, April 9, 16, and 23, May 7 and 14, and lectures on endocrine and metabolic diseases on the same days from 1 to 3:30 p. m. Registration fee, $25 ($15 for those who previously enrolled for fall only). For information contact the Commission on Graduate Education, Medical Society of the State of Pennsylvania, 230 State St., Harrisburg.

Philadelphia

Society News.—The Philadelphia Allergy Society has elected Dr. Howard C. Leopold, president; Dr. George W. Truitt, vice-president; and Dr. Edmund E. Ehrlich, secretary-treasurer. The society recently presented Dr. Louis E. Silcox with the Lillian Snyder award of $50 for his paper "The Role of Bacteria in Respiratory Allergy in Children."——The Philadelphia Neurological Society has elected Dr. Alexander Silverstein, president; Dr. Henry A. Shenkin, first vice-president; Dr. Elic A. Denbo, Camden, N. J., second vice-president; Dr. Charles Rupp, secretary; and Dr. Harvey Bartle Jr., treasurer.

Dr. Nulsen Goes to Western Reserve.—Dr. Frank E. Nulsen, assistant professor of neurosurgery, University of Pennsylvania School of Medicine, Philadelphia, will become professor of neurosurgery, July 1, at Western Reserve University School of Medicine, Cleveland, where he will be the first occupant of the Harvey Huntington Brown Jr. chair in neurosurgery. Dr. Nulsen, who has been affiliated with Peter Bent Brigham Hospital and Children's Medical Center in Boston, Bryn Mawr Hospital, and Philadelphia General Hospital, has served as assistant chief of the neurological section with the Army Medical Corps at Cushing General Hospital, Framingham, Mass.

VIRGINIA

Congress for Otorhinolaryngologists.—The Gill Memorial Eye, Ear and Throat Hospital will hold its annual spring congress in ophthalmology, otology, rhinology, laryngology, faciomaxillary surgery, bronchoscopy, and esophagoscopy in Roanoke, April 6-11. Dr. Louis H. Bauer, Hempstead, N. Y., President of the American Medical Association, will be guest speaker at the banquet at the Hotel Roanoke, Wednesday, and will address the student body of Roanoke College on Thursday at noon. Other out-of-state speakers include: Drs. Rudolf Aebli, Milton L. Berliner, John M. Converse, Arthur Linksz, Raymond E. Meek, and Algernon B. Reese, New York; Drs. J. Lamar Callaway, Guy L. Odom, and Charles R. Stephen, Durham, N. C.; Dr. Glen G. Gibson, Philadelphia; Drs. Jack S. Guyton and Charles E. Iliff Jr., Baltimore; Dr. Wallace E. Herrell, Rochester, Minn.; Drs. Frank D. Lathrop and Alexander S. MacMillan, Boston; Drs. Francis L. Lederer and Oliver E. Van Alyea, Chicago; and Dr. Hyla B. Stallard, London, England.

WEST VIRGINIA

Pilgrimage to Chicago.—The annual Pilgrimage of the West Virginia Obstetrical and Gynecological Society will be held in Chicago, April 9-11, under the presidency of Dr. Clarence H. Boso, Huntington. Dr. Herbert E. Schmitz, Chicago, will present the program on Thursday at Mercy Hospital, and Dr. Frederick H. Falls, Oak Park, Ill., will be in charge of the program on Friday at the University of Illinois School of Medicine; both will be in charge of the program at Cook County Hospital on Saturday. The Palmer House has been designated as headquarters hotel.

Meeting of Chest Physicians.—The annual meeting of the Potomac Chapter of the American College of Chest Physicians will be held at the Greenbrier in White Sulphur Springs, April 10. The following program will be presented:

Rene Theophile Hyacinthe Laennec, George R. Maxwell, Morgantown.
Diagnosis and Surgical Management of Chylothorax, Roy G. Klepser, Washington, D. C.
Surgical Treatment of Mitral Stenosis, Edgar W. Davis, Washington, D. C.
Problems in Tuberculosis Control in Potomac Area, Robert L. Smith, Washington, D. C.
Diagnosis and Surgical Treatment of Emphysema, Otto C. Brantigan, Baltimore.
Bronchial Adenoma, M. Lawrence White Jr., Huntington.

Vernon E. Krahl, Ph.D., department of anatomy, University of Maryland School of Medicine, Baltimore, will present a motion picture, "The Expansion of the Newborn Lung." Irvin Stewart, Ph.D., Morgantown, president of the West Virginia University, who will be the speaker at the noon luncheon, will present "A New Medical Education Program for West Virginia." Physicians wishing to participate in a chest radiological conference, which will be held in connection with the meeting, are requested to write to Dr. Joel Allen, 1021 Quarrier St., Charleston.

WISCONSIN

Society News.—The Milwaukee Oto-Ophthalmic Society has elected the following officers: president, Dr. Gerhard D. Straus; vice-president, Dr. Howard C. High Jr.; and secretary, Dr. Erwin E. Grossman.——Dr. Alexander Brunschwig, New York, will address the Medical Society of Milwaukee County April 9, 8:15 p. m. at the Athletic Club, Milwaukee, on carcinoma.

Course on Arthritis.—Dr. Mark W. Garry, assistant clinical professor of medicine at Marquette University School of Medicine, Milwaukee, will direct a postgraduate course on "Arthritis and Allied Rheumatic Disorders" April 15, 22, and 29 under the auspices of the Wisconsin Arthritis and Rheumatism Foundation. Lectures and case presentations will be held at the medical school and at the VA Hospital. Inquiries should be addressed to the Director of Postgraduate Programs, Marquette University School of Medicine.

GENERAL

Meeting on Health and Physical Education.—The Southern District Association, American Association for Health, Physical Education, and Recreation, will meet in St. Petersburg, Fla., April 8-10 to discuss "Education's Challenge: Ethical Standards, Moral Values." Fred V. Hein, Ph.D., American Medical Association, Chicago, will speak on "Trends in School Health." Clifford L. Brownell, Ph.D., Teachers College, Columbia University, New York, and president of the parent association, will discuss "Physical Education's Responsibilities in Athletic Problems."

Fulbright Awards Offered.—U. S. government awards under the Fulbright Act have been announced for (1) Germany and Finland and (2) Union of South Africa, Southeast Asia, and the Pacific. Applications for university lecturing in the first group (September, 1953, to June, 1954) and for lecturing and advanced research in the second group (1954-1955 programs) must be postmarked no later than April 15. Information may be obtained from the Conference Board of Associated Research Councils, Committee on International Exchange of Persons, 2101 Constitution Ave., Washington 25, D. C.

Border Public Health Meeting.—The U. S.-Mexico Border Public Health Association will hold its annual meeting in El Paso, Texas, and Ciudad Juarez, Chihuahua, Mexico, April 8-10. The program includes the following presentations:

The Border Public Health Problem, George W. Cox, Austin, Texas.
Our Aging Population, Hardy A. Kemp, Houston, Texas.
Psittacosis as an International Problem, Calvin B. Spencer, Washington, D. C.
Encephalitis in California, Wilton L. Halverson, San Francisco.
Isoniazid in Treatment of Murine and Human Leprosy, Charles M. Carpenter, Los Angeles.
Fly Control in Los Angeles, George M. Uhl, Los Angeles.
Venereal Disease Problem Created by Migratory Laborers in Arizona, Clarence G. Salsbury, Phoenix, Ariz.
Newer Drugs in Treatment of Tuberculosis, Jack C. Postlewaite, El Paso, Texas.
Report on Smallpox in the United States, Gilbert L. Dunnahoo, San Francisco.

Federation for Experimental Biology.—The annual meeting of the Federation of American Societies for Experimental Biology will be held in Chicago, April 6-10, with the American Society of Biological Chemists as host society. Headquarters hotels will be the Conrad Hilton for the American Society of Biological Chemists, American Society for Experimental Pathology, American Institute of Nutrition, and the American Association of Immunologists; the Palmer House for the American Physiological Society; and the Congress Hotel for the American Society for Pharmacology and Experimental Therapeutics. The joint session of the federation, presenting three papers on the general topic, "Some Aspects of Light and Biology," will be held Tuesday evening, April 7, at the Conrad Hilton, with Vincent du Vigneaud, Ph.D., chairman of the federation board, presiding. A special session of the federation presenting a report on the "Survey of Physiological Science" has been scheduled for Thursday evening, April 10, in the North Ballroom at the same hotel, with Dr. Ralph W. Gerard, Chicago, acting as chairman. Members of the constituent societies, guests, and other biologists and physicians interested may attend.

Medical Historians Meet in Ohio.—The American Association of the History of Medicine will hold its annual meeting under the presidency of Dr. John F. Fulton, New Haven, Conn., in conjunction with the Ohio sesquicentennial celebrations, at the Ohio State Museum, Columbus, April 10-12, with headquarters at the Fort Hayes Hotel. A joint meeting with the Ohio State Archaeological and Historical Society at 2 p. m. Friday will be followed by tea at the Faculty Club. At 8 p. m. Chauncey D. Leake, Ph.D., Galveston, will preside at a symposium on "Pre-Columbian Medicine." Saturday at 1 p. m. the Ohio Academy of Medical History will present a symposium on "One Hundred and Fifty Years of Medicine and Dentistry in Ohio," with Dr. Howard Dittrick, Cleveland Heights, Ohio, presiding. At 3:30 p. m. the Fielding H. Garrison lecture on "An Introduction to the History of Medicine, 1498" will be presented by Dorothy M. Schullian, Cleveland. In the evening at an informal dinner meeting, 7:30 p. m. at the Fort Hayes Hotel, Dr. Ralph H. Major, Kansas City, Kan., will speak on "Etruscans and Their Medicine." Nonmembers, including ladies, are cordially invited. Dinner reservations ($5) should be made with Mr. John O. Marsh, Ohio State Museum, Columbus 10.

Western Conference on Anesthesiology.—The California Society of Anesthesiologists and the Northwest Society of Anesthesiologists will sponsor the third Biennial Western Conference, April 8-10, at the Ambassador Hotel, Los Angeles. The theme of the conference, "The Nervous System," will be elaborated in a round-table discussion on "Anesthesia for Central Nervous System Surgery" at 4 p. m. Wednesday. Dr. Emanuel M. Papper, New York, will serve as moderator, and Dr. C. Hunter Shelden, Dr. John B. Dillon, John Field II, Ph.D., and Dr. Cyril B. Courville, Los Angeles, as collaborators. Dr. Papper will also serve as moderator of a round-table discussion on "Diagnostic and Therapeutic Uses of Regional Anesthesia," Thursday, 3:45 p. m., in which Drs. Frederick P. T. Haugen, Portland, Ore., John J. Bonica, Tacoma, Wash., Daniel C. Moore, Seattle, J. Samuel Denson, Los Angeles, and Horace B. Graves, Vancouver, British Columbia, Canada, will

participate. On Friday the round table at 2 p. m. on "Complications to the Nervous System—Spinal and Nerve Injuries" will have as moderator Dr. Morris J. Nicholson, Boston, and as participants Drs. Papper, Henry W. Dodge Jr., Rochester, Minn., and Angus Wright and Clarence J. Berne, Los Angeles. At 3:50 p. m. Judge Stanley N. Barnes, Judge of Superior Court, Mr. Harold Hunter, trial attorney, Dr. Louis Regan, Los Angeles, legal consultant, Dr. John Feldman, Quincy, Ill., industrial surgeon, and Charles F. McCuskey, Los Angeles, anesthesiologist, will collaborate in a round table on "Malpractice," with Dr. Douglass H. Batten, San Diego, as moderator.

Railway Surgeons Meet in Chicago.—The annual meeting of the American Association of Railway Surgeons will be held at the Drake Hotel, Chicago, April 7-9. The following presentations will be made:

Treatment of Burns, G. Kenneth Lewis, Chicago.
Occupational Dermatoses, Herbert Rattner, Chicago.
Therapeutic Uses of Radioactive Isotopes, Dwight E. Clark, Chicago.
Carcinoma of the Prostate Gland, William J. Baker, Chicago.
Treatment of Compression Fractures of Spine, Harvey Nelson, Minneapolis.
Intramedullary Fixation of Fractures, Harold A. Sofield, Chicago.
Restitution Surgery for Nonunion and Certain Fresh Fractures of the Neck of the Femur, Hampar Kelikian, Chicago.
Management of Maxillofacial Injuries, Wayne B. Slaughter, Chicago.
Surgery of the Common Bile Duct, Thomas C. Douglass, Chicago.
Massive Upper Gastrointestinal Hemorrhage, Lowell D. Snorf, Evanston.
Antisecretory Drugs in the Treatment of Peptic Ulcer, Walter L. Palmer and Joseph B. Kirsner, Chicago.
Status of Surgery in Treatment of Peptic Ulcer, John M. Dorsey, Chicago.
Some Practical Uses of Hormones, Harley E. Cluxton Jr., Chicago.
Recent Advances in Cardiac Surgery and the Problem of Cardiac Arrest, Egbert H. Fell, Chicago.
Treatment of Peripheral Arteriosclerosis, Ormand C. Julian, Chicago.
Evaluation of the Cardiac Patient for Surgery, Chauncey C. Maher, Chicago.
Treatment of Early Pulmonary Tuberculosis as Disclosed by Mass X-Ray Survey, Eugene L. Walsh, Chicago.
Ophthalmological Problems in Railroad Employes, Kenneth L. Roper, Chicago.
Alteration in Physiology Due to Spinal Cord Lesions, Lewis J. Pollock, Chicago.
Surgical Experiences with Gout, William A. Larmon, Chicago.

Heart Association Meeting in Atlantic City.—The American Heart Association's annual meeting will be held in Atlantic City, N. J., April 8-12 at the Hotel Chelsea. The scientific sessions begin with a special session Thursday night on electrocardiography and vectorcardiography. Friday morning there will be a panel on "Prevention of Rheumatic Fever," and in the afternoon the Lewis A. Conner memorial lecture by William F. Hamilton, Ph.D., professor of physiology, Medical College of Georgia, Augusta, who will discuss "The Physiology of Cardiac Output." A panel on the "Interruption of Sympathetic Pathways by Surgical and Medical Means," particularly as applied to the treatment of high blood pressure cases, is scheduled for Saturday morning. Saturday afternoon the George E. Brown memorial lecture will be delivered by Dr. David P. Barr, professor of medicine, Cornell University Medical College, New York, on "Chemical Factors in the Pathogenesis of Atherosclerosis." A panel discussion on "Surgery for Congenital Heart Defects" will be held Sunday morning, and the Sunday afternoon session will include a panel discussion on "Anticoagulant Therapy." The annual dinner Friday night will feature the presentation of Gold Heart awards for scientific contributions in the cardiovascular field and for outstanding effort in advancing the program of the American Heart Association. The initial presentation of the annual Howard W. Blakeslee award will be made to the individual whose creative efforts in a medium of mass communication are considered to have contributed most to the public's understanding of cardiac diseases.

FOREIGN

Hematology Congress.—The fourth congress of the European Society of Haematology will be held in Amsterdam under the sponsorship of the Society of Haematology of the Netherlands, Sept. 8-12. The subjects to be discussed are immunohematology, erythropoiesis and hemoglobin metabolism, acute leukemia, and physiology and pathology of coagulation. Among the American physicians who are listed on the program are Dr. Malcolm M. Hargraves, Rochester, Minn. (Immunobiological Problems in Lupus Erythematodes), Dr. C. Watson, Minneapolis (Porphyrines), Dr. Carl V. Moore, St. Louis (Iron Metabolism), and Dr. William Dameshek, Boston (Iron and Hemoglobin in Leukemias). Information may be obtained from the secretary of the congress, S. Verloop, Maliesingel 15, Utrecht, Netherlands.

EXAMINATIONS AND LICENSURE

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: *Parts I and II.* All centers where there are five or more candidates. April 20-21 (Part II only), June 22-24 and Sept. 8-10 (Part I only). Candidates may file applications at any time, but the National Board must receive them at least six weeks before the date of the examination they wish to take. Exec. Sec., Dr. John P. Hubbard, 133 South 36th St., Philadelphia 4.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF ANESTHESIOLOGY: *Written.* Various locations, July 17. Final date for filing applications was January 17. Sec., Dr. C. B. Hickcox, 80 Seymour St., Hartford 15.

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY: *Written.* Various Centers, Sept. 3. Final date for filing applications is May 1. *Oral.* Philadelphia, Oct. 16-18. Exec. Sec., Miss Janet Newkirk, 66 East 66th St., New York 21.

AMERICAN BOARD OF INTERNAL MEDICINE: *Oral.* Boston, April 9-11; New York City, May. The closing date for acceptance of applications for oral examinations in New Orleans, Boston and New York City was January 2 except for candidates in military or Naval Service. *Oral.* San Francisco, Sept. 21-23; Chicago, Nov. 30-Dec. 2. The closing date for acceptance of applications for the San Francisco and Chicago oral examination is April 1. *Oral Examiners in the Subspecialties.* Allergy, New York City, June. Cardiovascular Disease, Philadelphia, April 7 and New York City, May 27. Gastroenterology, Philadelphia, April 10-11. Pulmonary Disease, Boston, April 8 or 9 and Los Angeles, May. The closing date for acceptance of applications was February 1. *Written.* October 19. The closing date for acceptance of applications is May 1. Exec. Sec.-Treas., Dr. William A. Werrell, 1 West Main St., Madison 3.

AMERICAN BOARD OF NEUROLOGICAL SURGERY: *Oral.* Chicago, May or June 1953. Final date for filing application for the oral examination was Jan. 15, 1953. Sec., Dr. Leonard T. Furlow, Washington University School of Medicine, Kingshighway and Euclid Ave., St. Louis.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: *Oral and Pathological, Part II.* Chicago, May 17-24. Final date for filing application was Feb. 1. Sec., Dr. R. L. Faulkner, 2105 Adelbert Road, Cleveland 6.

AMERICAN BOARD OF OPHTHALMOLOGY: *Practical.* New York City, June 6-10; Chicago, Oct. 5-9. *Written.* Various Centers, January 1954. Final date for filing applications is July 1. Sec., Dr. Edwin B. Dunphy, 56 Ivie Road, Cape Cottage, Maine.

AMERICAN BOARD OF OTOLARYNGOLOGY: *Oral.* New Orleans, April 20-24; Chicago, Oct. 5-9. Sec., Dr. Dean M. Lierle, University Hospital, Iowa City.

AMERICAN BOARD OF PEDIATRICS: *Oral.* Philadelphia, May 1-3; Detroit or Ann Arbor, June; Place undecided, Oct. 9-11 (tentative); Indianapolis, November. *Oral.* Pediatric Allergy. Chicago, April 28. Exec. Sec., Dr. John McK. Mitchell, 6 Cushman Road, Rosemont, Pa.

AMERICAN BOARD OF PHYSICAL MEDICINE AND REHABILITATION. *Oral and Written.* May 30-31. Final date for filing applications was March 31. Sec., Dr. Robert L. Bennett, 30 N. Michigan Blvd., Chicago.

AMERICAN BOARD OF PLASTIC SURGERY: New Orleans, May 9-11. Final date for receipt of case reports for the spring examination was January 1. Final date for receipt of case reports for the fall examination (October-November) is June 1 of each year. Corres. Sec., Mrs. Estelle E. Hillerich, 4647 Pershing Ave., St. Louis 8, Mo.

AMERICAN BOARD OF PREVENTIVE MEDICINE: April 23-25, Berkeley, Boston, Baltimore, Minneapolis and New Orleans. New York City, Nov. 7-9. Sec., Dr. Ernest L. Stebbins, 615 North Wolfe St., Baltimore 5.

AMERICAN BOARD OF PROCTOLOGY: *Part I.* For candidates in proctology and ano-rectal surgery. May 9, Kansas City, Minneapolis, Philadelphia and San Francisco. The examination will be in anatomy, physiology, biochemistry and pathology and will be both oral and written. Sec., Dr. Louis A. Buie, 102-110 Second Ave., S.W., Rochester, Minn.

AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY: San Francisco, April 30-May 1. Sec.-Treas., Dr. David A. Boyd, Jr., 102-110 Second Ave., S.W., Rochester, Minn.

AMERICAN BOARD OF RADIOLOGY: *Oral.* Tampa, April 8-15. Sec., Dr. B. R. Kirklin, 102-110 Second Ave., S.W., Rochester, Minn.

MEETINGS

AMERICAN MEDICAL ASSOCIATION: Dr. George F. Lull, 535 North Dearborn St., Chicago 10, Secretary.

1953 Annual Session, New York, June 1-5.

1953 Clinical Session, St. Louis, Dec. 1-4.

1954 Annual Session, San Francisco, June 21-25.

1954 Clinical Session, Miami, Florida, Nov. 30-Dec. 3.

AERO MEDICAL ASSOCIATION, Biltmore Hotel, Los Angeles, May 11-13. Dr. Thomas H. Sutherland, P. O. Box 26, Marion, Ohio, Secretary.

ALABAMA, MEDICAL ASSOCIATION OF THE STATE OF, Birmingham, April 16-18. Dr. D. L. Cannon, 537 Dexter Ave., Montgomery, Secretary.

AMERICAN ACADEMY OF PEDIATRICS, Areal Meeting, Hotel Statler, Boston, April 20-22. Dr. E. H. Christopherson, 610 Church St., Evanston, Illinois, Executive Secretary.

AMERICAN ACADEMY OF TUBERCULOSIS PHYSICIANS, Hotel Roosevelt, New York, May 30. Dr. Oscar S. Levin, P. O. Box 7011, Denver 6, Secretary.

AMERICAN ASSOCIATION FOR CLEFT PALATE REHABILITATION, The Atlanta-Biltmore, Atlanta, Ga., April 27-28. Dr. Jack Matthews, 1617 Cathedral of Learning, University of Pittsburgh, Pittsburgh 13, Secretary.

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS, The Homestead, Hot Springs, Va., May 6-8. Dr. Norris J. Heckel, 122 S. Michigan Blvd., Chicago 3, Secretary.

AMERICAN ASSOCIATION OF THE HISTORY OF MEDICINE, Fort Hayes Hotel, Columbus, Ohio, April 10-12. Dr. Samuel X. Radbill, 7043 Elmwood Ave., Philadelphia 42, Secretary.

AMERICAN ASSOCIATION OF IMMUNOLOGISTS, Congress Hotel, Chicago, April 6-10. Dr. John Y. Sugg, 1300 York Avenue, New York, Secretary.

AMERICAN ASSOCIATION ON MENTAL DEFICIENCY, Hotel Statler, Los Angeles, May 12-16. Dr. Neil A. Dayton, P. O. Box 96, Willimantic, Conn., Secretary.

AMERICAN ASSOCIATION OF RAILWAY SURGEONS, Drake Hotel, Chicago, April 7-9. Dr. Chester C. Guy, 5800 Stony Island Ave., Chicago 37, Secretary.

AMERICAN ASSOCIATION FOR THE STUDY OF NEOPLASTIC DISEASES, Lord Baltimore Hotel, Baltimore, April 30-May 2. Dr. Bruce H. Sisler, Gatlinburg, Tenn., Secretary.

AMERICAN BLOOD IRRADIATION SOCIETY, Waldorf-Astoria, New York, May 30-31. Dr. H. T. Lewis, 1241 Peermont Ave., Pittsburgh, Secretary.

AMERICAN BRONCHO-ESOPHAGOLOGICAL ASSOCIATION, Roosevelt Hotel, New Orleans, April 28-29. Dr. Edwin N. Broyles, 1100 North Charles St., Baltimore 1, Secretary.

AMERICAN COLLEGE OF ALLERGISTS, Conrad Hilton Hotel, Chicago, April 26-29. Dr. Fred W. Wittich, 423 LaSalle Medical Bldg., Minneapolis 2, Secretary.

AMERICAN COLLEGE OF PHYSICIANS, Haddon Hall, Atlantic City, N. J., April 13-17. Mr. E. R. Loveland, 4200 Pine St., Philadelphia 4, Executive Secretary.

AMERICAN FEDERATION FOR CLINICAL RESEARCH, Haddon Hall, Atlantic City, N. J., May 3. Dr. Lawrence E. Hinkle Jr., 525 East 68th St., New York 21, Secretary.

AMERICAN GASTRO-ENTEROLOGICAL ASSOCIATION, Claridge Hotel, Atlantic City, N. J., May 1-2. Dr. H. Marvin Pollard, University Hospital, Ann Arbor, Mich., Secretary.

AMERICAN GERIATRICS SOCIETY, Hotel Commodore, New York, May 28-30, Dr. Malford W. Thewlis, 25 Mechanic St., Wakefield, R. I., Secretary.

AMERICAN GOITER ASSOCIATION, Drake Hotel, Chicago, May 7-9. Dr. George C. Shivers, 100 E. St. Vrain St., Colorado Springs, Colo., Secretary.

AMERICAN HEART ASSOCIATION, Hotel Chelsea, Atlantic City, N. J., April 8-12. Dr. Charles D. Marple, 44 East 23d St., New York 10, Medical Director.

AMERICAN LARYNGOLOGICAL ASSOCIATION, Roosevelt Hotel, New Orleans, April 26-27. Dr. Harry P. Schenck, 326 South 19th St., Philadelphia 3, Secretary.

AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY, Roosevelt Hotel, New Orleans, April 28-30. Dr. C. Stewart Nash, 277 Alexander St., Rochester, N. Y., Secretary.

AMERICAN OPHTHALMOLOGICAL SOCIETY, The Homestead, Hot Springs, Va., May 28-30. Dr. Maynard C. Wheeler, 30 West 59th St., New York 19, Secretary.

AMERICAN OTOLOGICAL SOCIETY, Roosevelt Hotel, New Orleans, May 1-2. Dr. John R. Lindsay, 950 East 59th Street, Chicago 37, Secretary.

AMERICAN PEDIATRIC SOCIETY, Hotel Traymore, Atlantic City, N. J., May 6-8. Dr. Aims C. McGuinness, 237 Medical Laboratories, University of Pennsylvania, Philadelphia 4, Secretary.

AMERICAN PHYSIOLOGICAL SOCIETY, Conrad Hilton Hotel, Chicago, April 6-10. Dr. E. F. Adolph, Univ. of Rochester School of Medicine and Dentistry, Rochester, N. Y., Secretary.

AMERICAN PSYCHIATRIC ASSOCIATION, Hotel Statler, Los Angeles, May 4-9. Dr. R. Finley Gayle Jr., 6300 Three Chopt Road, Richmond, Va., Secretary.

AMERICAN PSYCHOSOMATIC SOCIETY, Chalfonte-Haddon Hall, Atlantic City, N. J., April 18-19. Dr. Frederick C. Redlich, 551 Madison Ave., New York 22, Secretary.

AMERICAN RADIUM SOCIETY, Plaza Hotel, St. Louis, April 19-22. Dr. John E. Wirth, 635 Herkimer St., Pasadena 1, Calif., Secretary.

AMERICAN RHEUMATISM ASSOCIATION, Waldorf-Astoria, New York, May 28-29. Dr. William H. Kammerer, 33 East 61st St., New York 21, Secretary.

AMERICAN SOCIETY OF BIOLOGICAL CHEMISTS, Conrad Hilton Hotel, Chicago, April 6-10. Dr. Elmer H. Stotz, 260 Crittenden Blvd., Rochester, N. Y., Secretary.

AMERICAN SOCIETY FOR CLINICAL INVESTIGATION, Chalfonte-Haddon Hall, Atlantic City, N. J., May 4. Dr. William M. M. Kirby, University of Washington School of Medicine, Seattle 5, Secretary.

AMERICAN SOCIETY FOR EXPERIMENTAL PATHOLOGY, Chicago, April 6-9. Dr. Russell L. Holman, 1542 Tulane Ave., New Orleans 12, Secretary.

AMERICAN SOCIETY OF MAXILLOFACIAL SURGEONS, Cleveland, April 26-29. Dr. Casper M. Epsteen, 25 East Washington St., Chicago 2, Secretary.

AMERICAN SOCIETY FOR PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS, Conrad Hilton Hotel, Chicago, April 6-10. Dr. Carl C. Pfeiffer, 1853 W. Polk St., Chicago 12, Secretary.

AMERICAN SOCIETY FOR THE STUDY OF STERILITY, Henry Hudson Hotel, New York, May 25-31. Dr. Walter W. Williams, 20 Magnolia Terrace, Springfield 8, Mass., Secretary.

AMERICAN THERAPEUTIC SOCIETY, The Biltmore, New York, May 28-31. Dr. Oscar B. Hunter Jr., 915 Nineteenth St. N.W., Washington 6, D. C., Secretary.

AMERICAN TRUDEAU SOCIETY, Hotel Statler, Los Angeles, May 18-22. Dr. John D. Steele, 1790 Broadway, New York 19, Secretary.

AMERICAN UROLOGICAL ASSOCIATION, Hotel Jefferson, St. Louis, May 11-14. Dr. Charles H. deT. Shivers, Boardwalk National Arcade Bldg., Atlantic City, N. J., Secretary.

ARIZONA MEDICAL ASSOCIATION, Pioneer Hotel, Tucson, April 26-30. Dr. D. W. Melick, 541 Security Bldg., Phoenix, Secretary.

ARKANSAS MEDICAL SOCIETY, Little Rock, April 20-22. Dr. J. J. Monfort, 215 Kelley Bldg., Fort Smith, Secretary.

ASSOCIATION OF AMERICAN PHYSICIANS, Haddon Hall, Atlantic City, N. J., May 5-6. Dr. W. Barry Wood Jr., 600 S. Kingshighway Blvd., St. Louis 10, Secretary.

CALIFORNIA MEDICAL ASSOCIATION, Biltmore Hotel, Los Angeles, May 24-28. Dr. Albert C. Daniels, 450 Sutter St., San Francisco 8, Secretary.

CATHOLIC HOSPITAL ASSOCIATION OF THE UNITED STATES AND CANADA, Kansas City, Mo., May 25-28. Rev. John J. Flanagan, S.J., 1438 South Grand Blvd., St. Louis 4, Director.

CONNECTICUT STATE MEDICAL SOCIETY, Hampden High School, New Haven, April 27-29. Dr. Creighton Barker, 160 St. Ronan St., New Haven, Secretary.

FEDERATION OF AMERICAN SOCIETIES FOR EXPERIMENTAL BIOLOGY, Blackstone, Congress, Conrad Hilton hotels and Palmer House, Chicago, April 6-10. Dr. M. O. Lee, 2101 Constitution Avenue, Washington 25, D. C., Secretary.

FLORIDA MEDICAL ASSOCIATION, Hollywood Beach Hotel, Hollywood, April 26-29. Dr. Samuel M. Day, 413 Professional Bldg., Jacksonville, Secretary.

GEORGIA, MEDICAL ASSOCIATION OF, Savannah, May 10-13. Dr. David H. Poer, 875 West Peachtree St. N.E., Atlanta, Secretary.

HAWAII TERRITORIAL MEDICAL ASSOCIATION, Island of Maui, April 30-May 3. Dr. Samuel L. Yee, 1163 South Beretania St., Honolulu, Secretary.

ILLINOIS STATE MEDICAL SOCIETY, Hotel Sherman, Chicago, May 19-22. Dr. Harold M. Camp, 224 South Main St., Monmouth, Secretary.

INDUSTRIAL MEDICAL ASSOCIATION, Los Angeles, April 21-24. Dr. Arthur K. Peterson, 350 East 22d St., Chicago 16, Secretary.

IOWA STATE MEDICAL SOCIETY, Des Moines, April 26-29. Dr. Allan B. Phillips, 529 36th St., Des Moines 12, Secretary.

JOHN A. ANDREW CLINICAL SOCIETY, Memorial Hospital, Tuskegee Institute, Ala., April 12-18. Dr. Eugene H. Dibble Jr., Tuskegee Institute, Ala., Secretary.

KANSAS MEDICAL SOCIETY, Wichita, May 4-7. Dr. Dale D. Vermillion, 315 West Fourth St., Topeka, Secretary.

LOUISIANA STATE MEDICAL SOCIETY, Roosevelt Hotel, New Orleans, May 7-9. Dr. C. Grenes Cole, 1430 Tulane Ave., New Orleans 12, Secretary.

MARYLAND, MEDICAL AND CHIRURGICAL FACULTY OF THE STATE OF, Baltimore, April 28-29. Dr. George H. Yeager, 1211 Cathedral St., Baltimore 1, Secretary.

MASSACHUSETTS MEDICAL SOCIETY, Hotel Statler, Boston, May 19-21. Dr. Robert W. Buck, 22 The Fenway, Boston 15, Acting Secretary.

MINNESOTA STATE MEDICAL ASSOCIATION, Hotel St. Paul, St. Paul, May 25-27. Dr. B. B. Souster, 496 Lowry Medical Arts Bldg., St. Paul 2, Secretary.

MISSISSIPPI STATE MEDICAL ASSOCIATION, Biloxi, May 11-14. Mr. Roland B. Kennedy, 508 First Federal Bldg., Jackson, Executive Secretary.

MISSOURI STATE MEDICAL ASSOCIATION, Kansas City, April 26-29. Dr. H. E. Petersen, 634 N. Grand Blvd., St. Louis 3, Secretary.

NATIONAL TUBERCULOSIS ASSOCIATION, Statler and Biltmore hotels, Los Angeles, May 18-22. Mr. Kemp D. Battle, 1790 Broadway, New York 19, Secretary.

NEBRASKA STATE MEDICAL ASSOCIATION, Paxton Hotel, Omaha, May 11-14. Dr. R. B. Adams, 1315 Sharp Bldg., Lincoln 8, Secretary.

NEW ENGLAND SOCIETY OF ANESTHESIOLOGISTS, Boston, April 10. Dr. Francis J. Audin, 114 Danehill Rd., Newton Highlands 61, Mass., Secretary.

NEW JERSEY, MEDICAL SOCIETY OF, Haddon Hall, Atlantic City, May 18-21. Dr. Marcus H. Greifinger, 315 West State St., Trenton 8, Secretary.

NEW MEXICO MEDICAL SOCIETY, Hilton Hotel, Albuquerque, May 7-9. Dr. T. E. Kircher Jr., 221 West Central Ave., Albuquerque, Secretary.

NEW YORK, MEDICAL SOCIETY OF THE STATE OF, Hotel Statler, Buffalo, May 4-8. Dr. Walter P. Anderton, 386 Fourth Avenue, New York 16, Secretary.

NORTH CAROLINA, MEDICAL SOCIETY OF THE STATE OF, Hotel Carolina, Pinehurst, May 10-13. Dr. Millard D. Hill, 203 Capital Club Bldg., Raleigh, Secretary.

NORTH DAKOTA STATE MEDICAL ASSOCIATION, Clarence Parker Hotel, Minot, May 9-12. Dr. E. H. Boerth, Box 1198, Bismarck, Secretary.

NORTH PACIFIC SOCIETY OF NEUROLOGY AND PSYCHIATRY, Portland, Ore., April 10-11. Dr. Robert A. Coen, 218 Mayer Bldg., Portland 5, Ore., Secretary.

OGDEN SURGICAL SOCIETY, Orpheum Theater, Ogden, Utah, May 20-22. Dr. Irwin B. McQuarrie, 401 Eccles Bldg., Ogden, Utah, President.

OHIO STATE MEDICAL ASSOCIATION, Netherland Plaza, Cincinnati, April 21-23. Mr. Charles S. Nelson, 79 East State St., Columbus 15, Executive Secretary.

OKLAHOMA STATE MEDICAL ASSOCIATION, Cimarron Ballroom, Tulsa, April 13-15. Mr. R. H. Graham, 1227 Classen Drive, Oklahoma City, Executive Secretary.

PACIFIC COAST OTO-OPHTHALMOLOGICAL SOCIETY, Los Angeles, May 24-28, Dr. H. P. House, 1136 West 8th St., Los Angeles 14, Secretary.

RHODE ISLAND MEDICAL SOCIETY, Providence, May 6-7. Dr. Thomas Perry Jr., 106 Francis Street, Providence, Secretary.

SECTIONAL MEETINGS, AMERICAN COLLEGE OF SURGEONS:

CALGARY, Alberta, Canada, Palliser Hotel, April 23-24. Dr. Donald G. MacQueen, Colonel Belcher Hospital, Calgary, Alberta, Canada, Chairman.

SOCIETY OF BIOLOGICAL PSYCHIATRY, Hotel Statler, Los Angeles, May 3. Dr. George N. Thompson, 2010 Wilshire Blvd., Los Angeles 5, Secretary.

SOCIETY OF CLINICAL SURGERY, Spring Meeting, Nashville, Tenn., May 1-2. Dr. Champ Lyons, 620 South 20th St., Birmingham 5, Ala., Secretary.

SOCIETY FOR INVESTIGATIVE DERMATOLOGY, Belmont Plaza Hotel, New York, May 30-31. Dr. Herman Beerman, 255 South 17th St., Philadelphia 3, Secretary.

SOCIETY FOR PEDIATRIC RESEARCH, Hotel Traymore, Atlantic City, N. J., May 4-6. Dr. Sydney S. Gellis, 330 Brookline Ave., Boston 15, Secretary.

SOUTH CAROLINA MEDICAL ASSOCIATION, Columbia Hotel, Columbia, May 4-7. Dr. Robert Wilson Jr., 120 W. Cheves St., Florence, Secretary.

SOUTHEASTERN ALLERGY ASSOCIATION, Andrew Jackson Hotel, Nashville, Tenn., May 15-16. Dr. Katharine B. MacInnis, 1515 Bull St., Columbia 1, S. C., Secretary.

TENNESSEE STATE MEDICAL ASSOCIATION, Peabody Hotel, Memphis, April 13-15. Mr. V. O. Foster, 504 Doctors Bldg., Nashville, Executive Secretary.

TEXAS MEDICAL ASSOCIATION, Shamrock Hotel, Houston, April 26-29. Mr. N. C. Forrester, 1801 Lamar Blvd., Austin, Executive Secretary.

THE ENDOCRINE SOCIETY, Hotel Statler, New York, May 28-30. Dr. Henry H. Turner, 1200 North Walker St., Oklahoma City 3, Secretary.

U. S. CHAPTER, INTERNATIONAL COLLEGE OF SURGEONS, SURGICAL DIVISION MEETINGS:

KNOXVILLE, TENN., Andrew Johnson Hotel, April 24-25. Dr. E. Park Niceley, Acuff Clinic, 514 West Church St., Knoxville, Tenn., Chairman.

WALTER REED SOCIETY, Conrad Hilton Hotel, Chicago, April 9. Miss Marion E. Gridley, Suite 201, 208 North Wells St., Chicago 6, Executive Secretary.

WESTERN INDUSTRIAL MEDICAL ASSOCIATION, Hotel Statler, Los Angeles, April 18-25. Dr. E. P. Luongo, General Petroleum Corp., 613 South Flower St., Los Angeles 14, Secretary.

WESTERN SECTION AMERICAN UROLOGICAL ASSOCIATION, Palace Hotel, San Francisco, April 27-30. Dr. Howard J. Hammer, 908 Hyde St., San Francisco 9, Chairman.

WESTERN SOCIETY OF ELECTRO-ENCEPHALOGRAPHY, Hotel Statler, Los Angeles, May 9-10. Dr. Sylvester N. Berens, 902 Boren Ave., Seattle, Secretary.

FOREIGN

BRITISH MEDICAL ASSOCIATION, Cardiff, S. Wales, July 13-17. Dr. A. MacCrae, B. M. A. House, Tavistock Square, London W.C.1, England, Secretary.

CANADIAN MEDICAL ASSOCIATION, Winnipeg, Manitoba, Canada, June 15-19. Dr. T. C. Routley, 135 St. Clair Avenue W., Toronto 5, Ontario, Canada, General Secretary.

CONGRESS OF INTERNATIONAL ANESTHESIA RESEARCH SOCIETY, Chateau Frontenac, Quebec, Canada, October 26-29. Dr. A. William Friend, 515 Nome Ave., Akron 20, Ohio, Chairman, Program Committee.

CONGRESS OF INTERNATIONAL LEAGUE AGAINST RHEUMATISM, Geneva and Zurich, Switzerland, Aug. 24-29. For information write: Dr. W. Tegner, The London Hospital, London E.1, England.

CONGRESS OF THE INTERNATIONAL SOCIETY OF ANGIOLOGY, Lisbon, Portugal, Sept. 18-20. Dr. Henry Haimovici, 105 East 90th St., New York 28, N. Y., U. S. A., Secretary.

CONGRESS OF THE INTERNATIONAL SOCIETY OF SURGERY, Lisbon, Portugal, Sept. 14-20. Dr. L. Dejardin, 141, rue Belliard, Brussels, Belgium, General Secretary.

EUROPEAN CONGRESS OF ALLERGOLOGY, Copenhagen, Denmark, May 20-23. Dr. Egon Brunn, Gersonavej 8, Hellerup, Copenhagen, Denmark, Secretary General.

INTERNATIONAL CONFERENCE ON THROMBOSIS AND EMBOLISM, Basle, Switzerland, July 15-19, 1954. Dr. W. Merz, Chief Medical Officer, Gynecological Clinic, University of Basle, Basle, Switzerland, Hon. Secretary.

INTERNATIONAL CONGRESS OF AUDIOLOGY, Leiden, Netherlands, June 5-6. Dr. H. A. E. ve Dishoeck, Leiden University, Leiden, Netherlands, President.

INTERNATIONAL CONGRESS OF ELECTROENCEPHALOGRAPHY AND CLINICAL NEUROPHYSIOLOGY, Boston, Mass., U. S. A., Aug. 18-21. Dr. Robert S. Schwab, Massachusetts General Hospital, Boston 14, Mass., U. S. A., Secretary-General.

INTERNATIONAL CONGRESS OF THE EUROPEAN SOCIETY OF HAEMATOLOGY, Amsterdam, Holland, Sept. 8-12. Dr. M. C. Verloop, Maliesingle 15, Utrecht, Holland, Secretary.

INTERNATIONAL CONGRESS ON GENETICS, Bellagio, Italy, August 4. Prof. C. Barigozzi, Instituto de Genetica, Universita de Milano, 10 via Celoria, Milan, Italy, Secretary.

INTERNATIONAL CONGRESS OF GYNECOLOGY, Geneva, Switzerland, July 21-26, 1954. Dr. Maurice Fabre, 1, rue Jules-Lefebore, Paris IXe, France, General Secretary.

INTERNATIONAL CONGRESS OF HIPPOCRATIC MEDICINE, Evian, France, Sept. 3-6. Prof. P. Delore, 13 rue Jarente, Lyons, France, Secretary-General.

INTERNATIONAL CONGRESS FOR HISTORY OF SCIENCE, Jerusalem, Israel, August 3-7. Prof. F. S. Bodenheimer, Hebrew University, Jerusalem, Israel, President.

INTERNATIONAL CONGRESS OF INTERNATIONAL COLLEGE OF SURGEONS, Sao Paulo, Brazil, April 26-May 2, 1954. Dr. Max Thorek, 1516 Lake Shore Drive, Chicago, Illinois, U.S.A., Secretary-General

INTERNATIONAL CONGRESS OF LOGOPEDICS AND PHONIATRICS, Milan and Stresa, Italy, Sept. 1-7. Dr. Deso A. Weiss, 115 East 86th St., New York 28, N. Y., U. S. A., General Secretary.

INTERNATIONAL CONGRESS ON MEDICAL LIBRARIANSHIP, London, England, July 20-25. Mr. W. R. LeFanu, % London School of Hygiene and Tropical Medicine, Keppel Street, London, W.C.1, England, Chairman.

INTERNATIONAL CONGRESS ON MENTAL HEALTH, University of Toronto, Toronto, Ontario, Canada, Aug. 14-21, 1954. For information write: Executive Officer, International Congress on Mental Health, 111 St. George St., Toronto, Ontario, Canada.

INTERNATIONAL CONGRESS OF MICROBIOLOGY, Rome, Italy, Sept 6-12. For information write: Dr. V. Puntoni, Citta Universitaria, Rome, Italy.

INTERNATIONAL CONGRESS ON OBSTETRICS AND GYNECOLOGY, Geneva, Switzerland, July 20-24, 1954. For information write: Prof. H. de Watteville, Maternité Hôpital Cantonal, Geneva, Switzerland.

INTERNATIONAL CONGRESS OF OTO-NEURO-OPHTHALMOLOGY, Bologna, Italy, May 3-7. Dr. Guiseppe Cristini, Clinica Oculistica, Policlinico, Bologna, Italy, General Secretary.

INTERNATIONAL CONGRESS OF OTORHINOLARYNGOLOGY, Amsterdam, Netherlands, June 8-13. Dr. W. H. Struben, J. J. Viottastraat 1, Amsterdam, Netherlands, Secretary.

INTERNATIONAL CONGRESS OF PAEDIATRICS, Havana, Cuba, Oct. 12-17. Prof. Felix Hurtado, 5a Avenue 124, Miramar, Havana, Cuba, President.

INTERNATIONAL CONGRESS OF RADIOLOGY, Copenhagen, Denmark, July 19-25. Professor Flemming Norgaard, 10 Oster Voldgade, Copenhagen K, Denmark, Secretary General.

INTERNATIONAL CONGRESSES OF TROPICAL MEDICINE AND MALARIA, Istanbul, Turkey, Aug. 28-Sept. 4. Professor Dr. Ihsan Sükrü Aksel, Tunel Meydam, Beyoglu, Istanbul, Turkey, General Secretary.

INTERNATIONAL CONVENTION OF X-RAY TECHNICIANS, Royal York Hotel, Toronto, Canada, June 28-July 2. For information write: Miss Beatrice Hurley, R.T., Registrar, St. Catherine Hospital, East Chicago, Ind., U. S. A.

INTERNATIONAL FERTILITY ASSOCIATION, Henry Hudson Hotel, New York, N. Y., U. S. A., May 25-31. Dr. Abner I. Weisman, 1160 Fifth Avenue, New York 29. N. Y., U. S. A., Associate Secretary General.

INTERNATIONAL GERONTOLOGICAL CONGRESS, London and Oxford, England, July 12-22, 1954. Prof. R. E. Tunbridge, General Infirmary, Department of Medicine, The University, Leeds, England, President.

INTERNATIONAL GYNAECOLOGICAL MEETING, Paris, France, May 22-23. For information write: Dr. Jacques Courtois, 1, rue Racine, St. Germain-en-Laye, Seine et Oise, France.

INTERNATIONAL HOSPITAL CONGRESS, London, England, May 25-30. Capt. J. E. Stone, 10 Old Jewry, London, EC2, England, Hon. Secretary.

INTERNATIONAL LEPROSY CONGRESS, Madrid, Spain, Oct. 3-10. Dr. Felix Contreras, Moreto 15, Madrid, Spain, Secretary.

INTERNATIONAL PHYSIOLOGICAL CONGRESS, Montreal, Canada, Aug. 31-Sept. 4. Dr. A. S. V. Burgen, Dept. of Physiology, McGill University, Montreal, Canada, Secretary.

INTERNATIONAL PSYCHO-ANALYTICAL CONGRESS, Bedford College, Regent's Park, London N.W.1, England, July 26-30. Dr. Ruth S. Eissler, 285 Central Park West, New York 24, N. Y., Hon. Secretary.

INTERNATIONAL VETERINARY CONGRESS, Stockholm, Sweden, Aug. 9-15. Prof. Axel Isaksson, Institute of Veterinary Medicine, Stockholm 50, Sweden, Secretary.

PACIFIC SCIENCE CONGRESS, Quezon City and Manila, Philippines, Nov. 16-28. Dr. Patrocinio Valenzuela, College of Pharmacy, University of the Philippines, Quezon City, Philippines, Secretary-General.

PAN AMERICAN CONGRESS OF THE MEDICAL PRESS, Buenos Aires, Argentine, July 12-16. Secretaria del Congress, 763 Uriburu, Buenos Aires, Argentine.

PHILIPPINE MEDICAL ASSOCIATION, Manila, April 19-26. Dr. Manuel D. Penas, Doctor's Hospital, 707 Vermont St., Manila, Philippines, Secretary.

ROYAL SANITARY INSTITUTE HEALTH CONGRESS, Hastings, England, April 28-May 1. For information write: Secretary, Royal Sanitary Institute, 90 Buckingham Palace Road, London 5, W1, England.

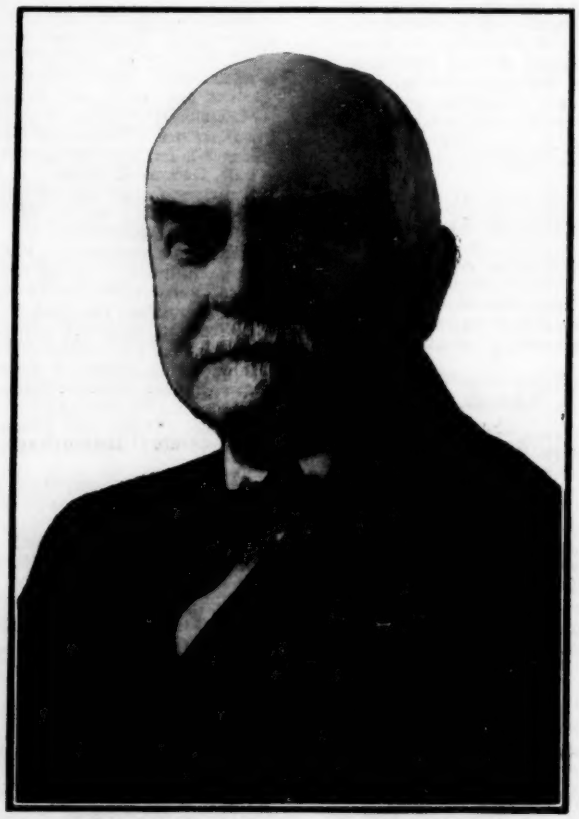
WORLD CONFERENCE ON MEDICAL EDUCATION, British Medical Association House, Tavistock Square, W.C.1, London, England, Aug. 22-29. Secretariat: World Medical Association, 2 East 103d St., New York 29, N. Y., U. S. A.

WORLD CONGRESS OF THE WORLD CONFEDERATION FOR PHYSICAL THERAPY, London, England, Sept. 7-12. Miss M. J. Neilson, Chartered Society of Physiotherapy, Tavistock House, South, Tavistock Square, London, W.C.1, England, Secretary.

WORLD MEDICAL ASSOCIATION, The Hague, Netherlands, Aug. 31-Sept. 7. Dr. Louis H. Bauer, 2 East 103d St., New York 29, N. Y., Secretary-General.

DEATHS

Cullen, Thomas Stephen ⊕ for many years a member of the Board of Trustees of the American Medical Association, died at his home in Baltimore March 4, aged 84. Dr. Cullen was born in Bridgewater, Ontario, Canada, Nov. 20, 1868. Following graduation from the University of Toronto Faculty of Medicine in 1890 as the first silver medalist, he served an internship at the Toronto General Hospital. In 1910 he was awarded a gold-headed cane given by the vice-president of the hospital for the best contribution to medical literature in 1909 by an ex-house surgeon of the hospital. In 1891, Dr. Cullen was appointed demonstrator of anatomy at his alma mater, and was given a year's leave of absence to work in Baltimore, where he became a junior intern in Dr. Howard Kelly's service at Johns Hopkins Hospital. Then for a while in 1893 Dr. Cullen studied in Europe and on returning to Baltimore took charge of gynecologic pathology at Johns Hopkins. During this period he was his own technician. In 1896 he became resident gynecologist, serving for a year, then resigned to enter practice in Baltimore, retaining his connection with the hospital as a member of the visiting staff and as teacher in the school, subsequently becoming an associate, an associate professor of gynecology, professor of clinical gynecology, and professor of gynecology, a post he held until his retirement in 1939. He was instrumental in securing the sum necessary to establish the world's first department of art as applied to medicine in the school. Dr. Cullen was chairman of the Section on Obstetrics, Gynecology, and Abdominal Surgery of the American Medical Association, 1914-1915, a member of the Board of Trustees from 1929 to 1941, a member of the House of Delegates in 1903, 1913-1914, 1916, 1918-1920, 1922, 1924-1925, 1942, and 1945-1947. He was president of the Johns Hopkins Medical Society in 1913, the Baltimore City Medical Society in 1916-1917, the Medical and Chirurgical Faculty of Maryland in 1927, and the Southern Surgical Association in 1916. He was member of the American Gynecological Society, American Association of Anatomists, and the American Association of Pathologists and Bacteriologists, an Associate Fellow of the American Medical Association, a member of Phi Beta Kappa, a corresponding member of the Gynecological Society, München, and Gesellschaft für Geburtshülfe, Leipzig, honorary member of La Societa Italiana Ostetricia Ginecologia, Rome, a fellow of the American College of Surgeons, and an honorary fellow of the Edinburgh Obstetrical Society. For many years Dr. Cullen was connected with the Church Home and Infirmary and Episcopal Hospital, and served on its medical board from the time of its establishment. In 1942 a life-size portrait of Drs. Guy L. Hunner, Thomas S. Cullen, and Samuel Griffith Davis Jr., all of Baltimore, was placed in the waiting room of the infirmary, the gift of the graduate nurses of the institution, the three being known as the "Three Musketeers" of medicine because of their close association for more than 40 years with the staff. Dr. Cullen always took an active interest in the Enoch Pratt Free Library, where he served as president and vice-president of the board and as a trustee. He was a trustee of the Hannah More Academy for girls located a short distance from Baltimore. From 1898 to 1908 Dr. Cullen did most of the general surgery as well as the gynecology at the Cambridge-Maryland Hospital in Cambridge, Md. In 1929 he was appointed a member of the state board of health, and in the summer of 1933 was appointed on the advisory board of Public Works, District 10, comprising Tennessee, Kentucky, North Carolina, West Virginia, Virginia, District of Columbia, Maryland, and Delaware, and when the Chesapeake Bay Authority was created he was appointed chairman. In 1917 Dr. Cullen was honored with the degree of doctor of science by Temple University in Philadelphia and in 1930, when the Banting Institute was opened in Toronto, received an LL.D. degree from the University of Toronto on that occasion. He was the author of "Cancer of the Uterus: Its Pathology, Symptomatology, Diagnosis and Treatment," 1900, "Adenomyoma of the Uterus," 1908, "Embryology, Anatomy, and Diseases of the Umbilicus," 1916, and "Henry Mills Hurd, The First Superintendent of the Johns Hopkins Hospital," 1920; joint author with Dr. Howard A. Kelly of "Myomata of the Uterus," in 1909. He served on the editorial board of the *Archives of Surgery*. Dr. Cullen edited the two volumes of gynecology for Dean Lewis' "System of Surgery." A book entitled "Tom Cullen of Baltimore," by Judith Robinson, was published in 1949 by the Oxford University Press. He described a sign of ruptured ectopic pregnancy, a bluish discoloration of the skin about the umbilicus, called Cullen's sign (see THE JOURNAL, March 4, 1922, page 643).



THOMAS STEPHEN CULLEN, M.D., 1868-1953

Clinton, James Broomfield ⊕ Fairmont, W. Va.; Jefferson Medical College of Philadelphia, 1916; formerly secretary of the Marion County Medical Society, and councilor of the First District of the West Virginia State Medical Association; fellow of the American College of Surgeons; served during World War I; since 1935 medical director of the Monongahela Power Company; affiliated with Fairmont General Hospital, where he died Feb. 11, aged 64, of myocardial infarction and hypertension.

Clough, David M. ⊕ Etna, Calif.; University of Minnesota Medical School, Minneapolis, 1942; served overseas during World War II and was awarded the Bronze Star for meritorious achievement in the performance of services during the period of April 15 to Oct. 1, 1944; died Jan. 9, aged 43, of injuries received in a plane crash near Round Mountain.

Crouse, Sheridan Anson, Roundup, Mont.; Baltimore University School of Medicine, 1898; served as city and county health officer, and as county coroner for many years; died in Musselshell Valley Hospital Jan. 17, aged 81.

⊕ Indicates Member of the American Medical Association.

Hall, Byron W., Omaha; Omaha Medical College, 1901; shot and killed Feb. 2, aged 75.

Hallman, Alfred Herman ⊕ Chicago; Rush Medical College, Chicago, 1922; associate professor of medicine at the Chicago Medical School; served as president of the Northwest region of the American Academy of General Practitioners; affiliated with Belmont Community Hospital; died Feb. 15, aged 55, of acute coronary thrombosis.

Hardy, Irby Vincent ⊕ Medford, Okla.; University Medical College of Kansas City, Mo., 1901; for many years county health officer; served as surgeon for the Chicago, Rock Island & Pacific Railway and Atchison, Topeka and Santa Fe Railway; affiliated with St. Mary's Hospital in Enid; died in Enid Jan. 12, aged 82, of cerebral hemorrhage.

Holley, Robert W. ⊕ Appalachia, Va.; Medical College of Virginia, Richmond, 1899; past president and once treasurer of the Wise County Medical Society; died Feb. 11, aged 75, of cerebral hemorrhage.

Hummer, Frederick Antonio, Kansas City, Mo.; University of Kansas School of Medicine, Kansas City, 1906; retired in 1936 after 32 years of continuous service in the employ of the post-office department; died Jan. 29, aged 81, of bronchopneumonia.

Inzer, Henry Haynes, De Leon, Texas; University of Nashville (Tenn.) Medical Department, 1903; died in Gorman Dec. 26, aged 81, of acute nephritis.

Israeli, Clara, Philadelphia; Woman's Medical College of Pennsylvania, Philadelphia, 1901; at one time pathologist for the New Hampshire State Board of Health in Concord, and director of State Laboratory of Hygiene of New Hampshire in Manchester; served in the Red Cross at various cantonments during World War I; retired from staff of Wills Hospital; died in Philadelphia General Hospital Jan. 14, aged 84, of arteriosclerotic heart disease and hip fracture due to a fall.

Jaffa, Adele R. Solomons, San Francisco; Hahnemann Medical College of the Pacific, San Francisco, 1893; College of Physicians and Surgeons, Boston, 1894; died in Peralta Hospital in Oakland, Calif., Jan. 20, aged 84, of cerebrovascular accident.

Jennings, Royal Garfield, Thomasville, N. C.; North Carolina Medical College, Charlotte, 1913; died in the North Carolina Baptist Hospital, Winston-Salem, Nov. 27, aged 62, of acute myocardial infarction.

Johnston, Howard Hubbard ⊕ Hampton, Iowa; Chicago College of Medicine and Surgery, 1917; died in Colonial Hospital, Rochester, Minn., Dec. 13, aged 59, of carcinoma of the lung.

Kahn, Walter S., Lowell, Mass.; Rheinische Friedrich-Wilhelms Universität Medizinische Fakultät, Bonn, Prussia, 1921; on the staff of St. John's Hospital; died Jan. 5, aged 56, of coronary thrombosis.

Kennedy, Daniel John ⊕ Philadelphia; Temple University School of Medicine, Philadelphia, 1906; chief medical examiner for the Philadelphia Transportation Company for many years; died in St. Agnes Hospital Jan. 17, aged 75.

Kennedy, Francis Preston ⊕ Carlton, Texas; (licensed in Texas, under the Act of 1907); died in December, aged 80, of injuries received when struck by an automobile.

Kerr, Carey Caldwell, Council Grove, Kan.; University Medical College of Kansas City, Mo., 1905; served during World War I; died in Kansas City, Mo., Jan. 24, aged 76, of coronary occlusion.

Korn, Philip, Raleigh, N. C.; Long Island College Hospital, Brooklyn, 1912; died Nov. 12, aged 64, of coronary thrombosis.

Lawton, Francis Asbury, Estill, S. C.; University of Maryland School of Medicine, Baltimore, 1904; died Jan. 18, aged 72, of a heart attack.

Lee, Lawrence ⊕ Bluffton, S. C.; Columbia University College of Physicians and Surgeons, New York, 1902; member of the Medical Association of Georgia; formerly practiced in Savannah, Ga., where he was affiliated with Telfair, Warren A. Candler, and St. Joseph's hospitals, and Oglethorpe Sanatorium, where he died Jan. 11, aged 72, of carcinoma of the liver.

Lindley, Frank Pickens ⊕ Powder Springs, Ga.; Atlanta College of Physicians and Surgeons, 1912; for many years member of the county school board; died in Georgia Baptist Hospital, Atlanta, Jan. 1, aged 62, of cerebral hemorrhage.

Livingston, Margaret Mary, Chicago; Bennett Medical College, Chicago, 1909; died Feb. 2, aged 87, of arteriosclerotic heart disease.

Ludwig, Edward Charles, Bexley, Ohio; Starling-Ohio Medical College, Columbus, 1909; died in White Cross Hospital, Columbus, Dec. 29, aged 70.

Luehrs, Leslie Earl ⊕ New York City; Rush Medical College, Chicago, 1916; member of the American Psychiatric Association; at one time director of mental hygiene work for the New York Association for Improving the Condition of the Poor; served during World War I; died Jan. 26, aged 59.

McCann, Walter Joseph ⊕ New York City; Columbia University College of Physicians and Surgeons, New York, 1930; affiliated with Morrisania Hospital; served during World War II; died Jan. 28, aged 49, of coronary thrombosis.

McCarron, Joseph Patrick ⊕ Lansford, Pa.; Jefferson Medical College of Philadelphia, 1939; served during World War II; on the staff of the Coaldale (Pa.) State Hospital; died Jan. 29, aged 38, of retroperitoneal fibrosarcoma.

Ralston, Oscar C., Marion, Ohio; Eclectic Medical Institute, Cincinnati, 1892; also a graduate in pharmacy; died Feb. 8, aged 80.

Rice, Clair Malcolm, Butler, Mo.; Barnes Medical College, St. Louis, 1901; died in Chicago Feb. 15, aged 73, of cerebral hemorrhage.

Settle, Charles Thomas ⊕ Rockport, Mo.; University Medical College of Kansas City, 1901; died in Fairfax, Jan. 23, aged 72, of cerebral hemorrhage.

Simon, Julius ⊕ New York City; Universität Heidelberg Medizinische Fakultät, Baden, Germany, 1910; affiliated with Westchester Square and Mount Sinai hospitals; died Jan. 10, aged 66, of coronary disease.

Smith, Robert Lewis ⊕ Russellville, Ark.; Eclectic Medical Institute, Cincinnati, 1896; fellow of the American College of Surgeons; for many years owner of St. Mary's Hospital; died Jan. 13, aged 76, of a heart attack.

Spikes, Norman Owen ⊕ Durham, N. C.; Jefferson Medical College of Philadelphia, 1924; served on the staffs of Watts and Duke hospitals; died in Burlington Jan. 29, aged 52, of pneumonia.

Stein, William Clement ⊕ Chicago; Rheinische Friedrich-Wilhelms Universität Medizinische Fakultät, Bonn, Prussia, Germany, 1920; died in the Manor Hospital Feb. 15, aged 61, of coronary thrombosis and arteriosclerosis.

Striebich, Joseph Albert ⊕ Moundsville, W. Va.; Baltimore University School of Medicine, 1899; an Associate Fellow of the American Medical Association; served during World War I; formerly secretary-treasurer of the Marshall County Medical Society; at one time county health officer; died in Wheeling Jan. 10, aged 78, of arteriosclerosis.

Thorington, Thomas Chilton ⊕ Montgomery, Ala.; Medical Department of Tulane University of Louisiana, New Orleans, 1894; past president of the Montgomery County Medical Society; served on the staff of St. Margaret's Hospital; died Jan. 27, aged 81, of lung abscess.

Tucker, Earl Van ⊕ Grifton, N. C.; Medical College of Virginia, Richmond, 1930; died in the Lenoir Memorial Hospital, Kinston, Jan. 22, aged 48, of acute coronary occlusion.

Vainisi, Salvatore Anthony ⊕ Chicago; Loyola University School of Medicine, Chicago, 1928; affiliated with Oak Park (Ill.) Hospital, where he died Feb. 20, aged 49, of bronchopneumonia and acute nephrosis.

GOVERNMENT SERVICES

ARMY

First Woman Medical Officer in Regular Army.—On March 11, Fae M. Adams, MC, of San Jose, Calif., became the first woman physician commissioned in the U. S. Regular Army. The oath of office was administered in the Surgeon General's office. She is one of the Army's 20 women reserve medical officers now on active duty around the world. She is now the first woman medical officer integrated into the Regular Army under legislation by the 82nd Congress. On July 1 next, First Lieutenant Adams will report to the Walter Reed Army Hospital in Washington, D. C., to begin residency training, an educational privilege extended only to Regular Army medical officers.

Lieutenant Adams served during World War II as an enlisted member of the Women's Army Corps and later as a commissioned physical therapist. She entered the University of California at Berkeley in 1937 and finished her premedical course there in 1940. Three years later, while working as a camp counselor at Lake Tahoe, Nevada, Miss Adams enlisted in the WAC, and after basic training was sent to Aberdeen Proving Ground, Maryland, to be a technician in the Ballistics Research Laboratory. Later Private Adams began training for a commission as a physical therapist. She was commissioned a second lieutenant in June, 1945, and six months later was on her way to the Pacific area where she served for 14 months. Following discharge from the Army, Lieutenant Adams entered the Women's Medical College of Pennsylvania, Philadelphia, to continue her medical studies under the GI Bill. She was graduated there in June, 1951, and completed her internship at the hospital of the Women's Medical College of Pennsylvania.

Personal.—Brig. Gen. James P. Cooney, after 16 months of duty as surgeon-general of the Japan Logistical Command, has been appointed special assistant to the commanding general at Walter Reed Army Medical Center, Washington, D. C., where, before World War II, he was chief of the hospital's x-ray laboratory.

NAVY

Annual Navy Industrial Health Conference.—The Fifth Annual All-Navy Industrial Health Conference will be held April 17-23, 1953, at Los Angeles, the Navy's Bureau of Medicine and Surgery announces. The theme of the conference will be "Maximum Productive Efficiency Through Health Conservation." It will provide an opportunity for naval officers and civilian employees of the Navy Department engaged in industrial medicine, industrial hygiene engineering, and industrial nursing to exchange ideas on professional, technical, and administrative aspects of occupational health problems common in Navy industry. In addition, it will help to insure the Navy's Industrial Medicine Program is conducted in line with the most modern concepts in this rapidly developing field of science. The Annual Joint Meeting of the Industrial Medical Association, the American Conference of Governmental Industrial Hygienists, the American Industrial Hygiene Association, the American Association of Industrial Dentists, and the American Association of Industrial Nurses will be held in Los Angeles during the same period.

The meetings of the Fifth Annual All-Navy Industrial Health Conference have been arranged in panel form, and panel members have been selected to represent each of the various industrial classes in the Naval Industrial Establishment. All bureaus of the Navy Department having management control of field activities will be represented at the conference. Among the leaders in industrial health who will speak at the conference are: Drs. Gordon Hoople, Howard P. House, C. Stewart Nash, Aram Glorig, and D. E. Wheeler, all members of the National Research Council's Sub-Committee on Noise in Industry; John H. Foulger, director, medical research, E. I. du Pont de Nemours & Company; Verne K. Harvey, medical director, U. S. Civil Service Commission; F. J. Halpin, medical director, Bureau of Employees' Compensation, Department of Labor; and others, both civilian and military.

Personal.—Honorary membership in the Brazilian Military Medical Academy was bestowed on Capt. C. J. Stuart, MC, commanding officer, Naval Hospital, Portsmouth, Va., at a recent ceremony at that hospital.

MISCELLANEOUS

National Mine Safety Contest at Fort Wayne.—A nationwide first-aid and mine-rescue contest will be held at Fort Wayne, Ind., Sept. 20 to Oct. 1, Secretary of the Interior Douglas McKay has disclosed. The site was selected at a recent meeting between representatives of the Bureau of Mines, state mining departments, and the coal industry, including both operators' and workers' organizations. This will be the second such contest held since World War II. The first one held at Columbus, Ohio, in 1951, attracted about 60 teams from 10 of the 23 coal-producing states. A larger representation is expected this year.

The Fort Wayne meet will be held in the new Allen County Memorial Coliseum. It is planned to conduct the first-aid competition in the arena and the mine-rescue competition in the large exhibit hall of the Coliseum. A banquet and award of prizes will be held the last day. National competitions of this type were held regularly through the fall of 1930 but were suspended for several years. Most district and state first-aid and mine-rescue contests were suspended during the war but were resumed after the close of hostilities. The Bureau of Mines is interested in such contests because they help arouse safety consciousness among mine officials and workmen. Promoting safety in the nation's mineral industries is one of the bureau's major duties, and for 43 years it has been conducting a broad program of first-aid, accident-prevention, and mine-rescue training.

Commission Expects Diathermy Users to Comply with Rules by June 30.—On June 25, 1952, the Federal Communications Commission adopted a report and order amending section 18.51 of the Rules and Regulations Relating to Industrial, Scientific, and Medical Service to extend until June 30, 1953, the applicable date of part 18 to medical diathermy equipment manufactured prior to July 1, 1947. In that report and order the commission advised all interested parties that if further requests for extension of the applicability date were sought, such requests would be considered on an individual basis, taking into consideration the efforts made by the users of nonconforming equipment to replace it during the period for which the extension was granted.

The commission continues to receive reports of interference caused by the operation of medical diathermy equipment. With few exceptions, the equipment responsible for the interference is equipment that was manufactured prior to July 1, 1947, and that does not comply with the requirements of part 18, particularly with respect to the suppression of emissions outside the frequency bands allocated for medical diathermy equipment. Information available to the commission indicates that approved diathermy equipment is now available for early delivery. Accordingly, all interested persons are advised that the commission has no present intention of adopting any further general extension of the time for compliance with the applicable portions of part 18 of the rules beyond June 30, 1953.

FOREIGN LETTERS

ECUADOR

Ecuadorian Congress of Medicine.—The Fourth Ecuadorian Congress of Medicine was held in September, after a lapse of 12 years since the third congress. About 300 physicians from all parts of the country and several foreign physicians, who had been especially invited, attended the congress.

The congress met in two great sections, a clinical and a surgical section, for study of "official topics" of the congress. Each of the two sections was subdivided in three branches for the study of more than 200 papers on "free subjects." The official topics of the congress in clinical medicine were hepatic insufficiency, which was presented by Dr. Armando Pareja Coronel, and clinical aspects of allergy, which was presented by Dr. Plutarco Naranjo Vargas. The surgical topics discussed were prostatic surgery, presented by Dr. Maldonado Carbo, and surgery of the biliary tract, presented by Dr. Dionisio Espinoza Vega. The topic that was considered by the whole congress was cancer. Official speakers on this subject were Drs. Juan Tanca Marengo and Eduardo Ortega Moreira. In addition to these topics, various related subjects were discussed.

Simultaneously with the congress, the First Meeting on Pediatrics was held. The official subjects were antibiotics in pediatrics, which was presented by Drs. Manuel Ignacio Gómez-Lince, Elio Esteves, and J. A. Falconi, and polycarencial syndromes in children, which was presented by Drs. Carlos Andrade Marín, José Modesto Portilla, and Jorge Vallarino.

In the evenings of the days of the congress, lectures were delivered by Drs. George T. Pack, Robert R. Williams, and James Ruegjegger of the United States, and Atilio J. Costa of Argentina.

The Fourth Congress of Medicine was held under the presidency of Dr. Juan Tanca Marengo of Ecuador. The Fifth Congress will be held in Quito in March, 1956.

ITALY

Convention of Endocrinology.—The Italian Society of Endocrinology held its annual meeting in Montecatini Terme. Prof. Nicola Pende was the chairman. Professors Martiny and La Roche, from the Medical Academy of Paris, and Professor Canadel, from the University of Barcelona, were present in addition to many Italian university professors and physicians. In his opening speech, on the diencephalic phase of modern endocrinology, Professor Pende said that today when one speaks of neuroendocrinology the adjective correlative should be added. In this way not only the close correlation between the hormones and the autonomic nervous system is indicated, but the important fact is emphasized that in endocrine physiology, diagnosis, and therapy, the correlations that exist between the hormones should be known. The diagnosis of their imbalance in the patient is indispensable.

Today in the clinical study of endocrine disturbances, one can speak of a modern diencephalic phase of endocrinology. The functional condition of the diencephalon and its role in the genesis of the symptoms should always be considered. The diencephalon, or the basal vegetative and emotional brain, is today the main point of the so-called medicine of unity, which opposes the theories that separate the body of the patient from his soul and divide the body into many diseased organs and systems. This medicine of unity points toward a general neural theory, or theory of the "neuricon," according to which the diffuse nervous reticulum of Stohr that surrounds every cell regulates all the nutritive and defensive reactions of the cellular life. The diencephalon presides over the mechanism of trophic regulation and functional coordination of the life of each cell. Therefore, the endocrinologist should always keep in mind the importance of this basal brain and consider that the hormones also have actions that regulate and coordinate the entire organism. Although the diencephalon and the endocrine glands are coordinated, they have their own physiological and morbid autonomy, and, therefore, not all endocrinoses nor all "diencephaloses" can be classified as a diencephalon-endocrinosis, which is often done.

Professor Antognetti, director of the medical clinic of Genoa, and Dr. Adezati read a paper on chemicofunctional endocrine symptomatology. They discussed the correlations between the chemical structure and the biological activity of steroid elements and emphasized that all these hormones have different biological activities but similar chemical structures. They pointed out that slight modifications can turn their orientation in a completely different direction or make them lose all biological significance. The metabolism of these hormones that have a steroid nucleus is closely linked to that of cholesterol, and, therefore, all the organs that preside over the genesis and metabolism of cholesterol reflect their importance on these hormones also. Studies in this field have revealed that the possibility of cholesterol synthesis is diffused throughout the organism, but there are organs and apparatuses that are particularly active in this field because of the richness of their reticuloendothelial system. Then the speakers discussed the biological significance of the urinary metabolites and the methods for their determination, namely, for the determination of 17-ketosteroids, phenolic steroids, pregnanediols, and corticoids. The determination of the urinary steroids in physiological and in pathological conditions has great clinical and symptomatological importance; however, because a standardization of the various techniques is still lacking, the results obtained by the various authors cannot be compared. In speaking of protein hormones and of the so-called thyroid hormones, the speakers asserted the importance of iodine metabolism that is closely linked to the physiology of the cells and the thyroid. This is an organ specialized in the production of an iodine-protein, thyroglobulin, which is biologically active. The second group of protein hormones consists of the gonadotrophins, and these can be traced in the urine only with the use of biological methods.

Professor Lunedei, director of the University of Florence Institute of Medical Pathology, read a paper on neurovegetative endocrine symptomatology. He asserted that to have a neurovegetative symptomatology truly useful for an endocrine diagnosis one should restrict himself to the picture of the neurovegetative disturbances found in each disease of the endocrine glands and compare them with the non-neurovegetative symptoms. Of great usefulness in diagnosis is a symptomatological study that could indicate exactly which functional systems and which higher and spinobulbar centers are involved in each morbid status and then individualize the repercussions on the peripheral structures. As an example he cited the neurovegetative picture of the diseases of the thyroid and discussed the various symptoms and the diagnostic interpretation in the various patients. He believed it necessary to differentiate the vegetative symptoms arising from the action of the hormones on the psyche from those arising from lesions of the higher centers (especially for primary diseases of the diencephalon) and that may represent the causative factor of the endocrine syndrome. There are examples of the diencephalic origin of an entire morbid picture such as narcolepsy associated with obesity in elderly married women, or diabetes insipidus associated with Basedow's disease. He confirmed the importance that is today attributed to the diencephalon in the mechanism of regulation of the hypophyseal adrenotropic hormones.

Professor Turano, director of the University of Florence Institute of Radiology, reported on the radiological symptomatology of endocrine glands and differentiated a primary from a secondary symptomatology. The primary manifestations are those that are obtained from the study of the organ made visible either by radiographic reproduction or by means of

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The items in these letters are contributed by regular correspondents in the various foreign countries.

visualization after a transparent (gaseous) contrast environment has been created. At present there are no practical methods for opaque radiographic representation of an endocrine gland, except for the radioautography of the thyroid through the fixation of the radioactive isotope I^{131} in this part. The secondary radiological signs are those obtained from the study of the manifestations in remote organs and apparatuses. Prof. Alberto Anzilotti, head physician of the hospital of Leghorn, discussed the radiological symptomatology of the hypophysis.

LONDON

Close Contact Between Physicians and Hospitals.—The *British Medical Journal* of Oct. 11, 1952, comments on a recent speech by Mr. Iain Macleod, the Minister of Health. One of his main themes, it says, was greater scope for the family physician, with a consequent reduction in the number of calls on the hospital services. Many of the views he expressed have long been prominent features of the British Medical Association's policy. He also stated there should be a closer association between hospitals and family physicians, including contact between the general practitioner and his patient in hospital and direct access to x-ray and pathological departments. A great many general practitioners have been deprived, since the Health Service began, of the opportunity to care for patients in hospitals, sometimes leaving the staff and other times seeing a whole hospital taken over for other purposes. These purposes have usually in themselves been laudable enough, but their execution has had the effect of increasing the family physician's difficulty in maintaining contact with hospital work and thereby, what many have thought to be of serious detriment, impairing his experience of the latest developments in a science that has never advanced so rapidly as it does today. Many persons agree that some general practitioners should be able to obtain part-time hospital posts that would enable them to specialize and acquire the skill and experience by which they may become consultants in a chosen field, as was often done before the Health Service began.

Mr. Macleod stated that the general practitioner should be brought more into the picture, and he emphasized the financial advantages that would accrue from a policy that reduced hospital expenditures by giving greater responsibility to general practitioners. Among the reasons for such a policy is the fact that the family physician is the only medical worker in the Health Service who treats sickness in the home, with all that that involves. Mr. Macleod sees the family physician as the leader of a team comprising all the services provided by the local health authority. If the family physician could deploy home nurses, health visitors, and home helps as his patients needed, patients could be discharged much earlier from hospital and some might never have to enter hospital. Again financial reasons are put forward to emphasize the benefits of such a scheme, but surely patients would prefer to get back home as soon as possible, provided they could obtain there the treatment, rest, and nursing care supervised by their own physician, which in many circumstances only a hospital can provide. One good reason why such plans cannot be immediately realized is a shortage of nurses and home helps. Another difficulty, only temporary it is to be hoped, is unsatisfactory cooperation between separate sections of the Health Service. The reduction of the maximum permissible list for general practitioners under the new scheme should encourage a better distribution of physicians, and Mr. Macleod seems to share the concern of many members of the profession about the rate of entry to its ranks. While there are areas, as there still are, which are understaffed, it is difficult to assess what should be the optimum number of recruits to general practice each year; this will become clearer only when the nation is adequately served everywhere. Mr. Macleod suggested that when a good distribution has been achieved the ministry and the profession should together agree on the proper rate of entry. He added that remuneration would be linked to that rate, a problem that will need studying with some care. Mr. Justice Danckwerts, in making his award, stated there was no evidence before him that an unnecessarily large number of physicians was likely to enter the service within the next few years, but, if the number became unreasonably large, a part of the method he used to calculate the central pool would need to be reconsidered. In other words, the nation cannot afford to support an excessive number of physicians.

The desire for more and better cooperation between the different branches of the Health Service that the minister expressed throughout his address is one that most medical men share. This cooperation should spring from direct contacts between medical men concerned with the same patient and sharing the same purpose—to make or keep him healthy.

Fog Fatalities.—Further details have been published concerning the effect on the death rate of the fog that blacked out London from Dec. 5 to 9, 1952. These details are contained in a report by Dr. J. A. Scott, medical officer of health to the London County Council, and apply to the administrative county of London. During the week ended Dec. 13, 1952, there were 2,489 deaths registered compared with 753, 853, and 945 in the preceding three weeks, and 1,523, 1,029, and 1,372 in the following three weeks. For each million inhabitants, the number of deaths over the normal was 445, which is 202 more than the comparable rate during a week after the great fog of 1873 and 19 more than during the worst week of the cholera epidemic of 1866. Although more pronounced among babies and elderly persons, the increase in deaths during the week of the fog was not confined to any particular age group. Among children aged 4 weeks to a year and among persons over 55, three times as many deaths were registered in the week ended Dec. 13, 1952, as would be expected from the figures for the previous three weeks. Among persons of all other ages there were over twice as many deaths registered for the same week. The causes of the increase were almost entirely associated with disorders of the circulatory and respiratory system. Compared with the weekly average in the previous three weeks, during the week of the fog there were 10 times as many deaths due to bronchitis, 7 times as many due to influenza, nearly 5 times as many due to pneumonia, and 4½ times as many due to pulmonary tuberculosis. From disorders of the heart and circulatory system there were nearly three times as many.

Intra-Arterial Injections for Vascular Disease.—Edwards, Jones, McConnell, Pemberton, and Watson of Liverpool have been experimenting with various substances in conditions of intermittent claudication and ischemic necrosis. Those patients who give evidence of occlusive arterial disease are excluded if they show signs of coronary artery disease. The aim was to improve exercise tolerance or to limit the necrotic development. They use a needle and 20 ml. syringe. The needle is size 19 B.W.G. and 2½ cm. long. With no special preparation of the patient and no local anesthesia or incision, it is plunged directly into the femoral artery, pointing against the blood stream. In cases in which the patient has had alcohol and histamine the drip method, taking approximately 30 minutes, was used, but a rapid injection of benzylimidazoline (tolazoline), acetylcholine, and papaverine hydrochloride by the syringe method appeared to have no disadvantages. Accuracy of arterial puncture is facilitated by elevation of the pelvis and extension and external rotation of the limb. The procedure is safe and straightforward enough to be suitable for outpatient practice, and the patients may safely be allowed to go home within a short time of the injection. The use of all the vasodilator drugs mentioned gave evidence of improvement, and physicians were encouraged to use this method more frequently. There has so far been no unpleasant sequelae.

Physicians Share Difficult Patients.—The letter in the national newspaper *Sunday Times* from a man of 77, who pointed out that he was removed from his National Health Service physician's list because he required more attention than the practitioner could spare, has attracted some comment. Correspondents wonder whether, in these circumstances, a patient may have trouble in finding a medical attendant or, conversely, whether some willing family physician is overloaded with difficult patients. Neither difficulty should arise. In a case of this sort the county executive council, with the cooperation of the local physicians' representative, selects a physician in the area and asks him to accept the patient. One of the physicians' obligations under the Health Service is that they must accept a patient assigned to them by an executive council. This power, which is little used, effectively prevents any one physician from getting an unfair share of patients who require a lot of time and attention.

NORWAY

Nationalization of the Sale of Drugs.—Reference has already been made in THE JOURNAL (**142:**584 [Feb. 25] 1950) to the proposal by the Norwegian government to nationalize the wholesale traffic in drugs. The Labor Government is still in power, and toward the end of 1952 the committee appointed to deal with the matter issued a recommendation on the subject, with a majority report in favor of such action and a minority report protesting it. Those factions in favor of nationalization believe that by securing more adequate control, the drugs would improve in quality, they would become cheaper, and in the event of war the centralization entailed by nationalization would be an asset. It is proposed that the surplus derived from the profits of a nationalized drug industry shall be earmarked for reducing the cost of necessary and costly drugs and for promoting of public health and social welfare. In the majority report it is also recommended that a semiautonomous machinery be devised for the administration of the government-owned organization, which would be put in charge of a director with a certain measure of administrative latitude.

The minority report's arguments against nationalization are numerous and cogent. With regard to the control of the quality of drugs, it should be kept in mind that competition between various wholesale drug firms has in the past done much to insure a high standard of quality. As for the financing and assumed cheapening effected by the new scheme, the taxpayer should note that it will require a capital of about 30 million kroner. As for the argument that nationalization with its implied centralization would be an asset in time of war, there is much to be said to the contrary. In the event of war and the occupation of Norway by an enemy power, the invader would find it much easier to take over a central organization than one composed of many independent branches representing many different private firms. In other words, when the problem is viewed as one belonging to civil defense, decentralization with autonomy has much to recommend it. The objection has been made to the present system of private enterprise that the control of the quality of drugs is largely self-imposed, the inspected and the inspectors belonging more or less to the same camp. Under a scheme of nationalization the same objection might be raised, for the work of government officials would be inspected by another group of government officials.

Long-Term Bishydroxycoumarin Anticoagulant Therapy.—During the Scandinavian Medical Congress in the summer of 1952 in Oslo, much attention was paid to the treatment and prevention of thrombosis and embolism by drugs calculated to prevent blood-clotting. On this occasion Prof. P. A. Owren suggested that bishydroxycoumarin (dicumarol®), given on a long-term basis, is capable of banishing the distress of angina pectoris in several cases. At the Drammen Hospital, which is in the charge of Dr. O. Römcke, long-term bishydroxycoumarin therapy has been given to 47 patients between September, 1951, and June, 1952. Reporting on these cases in *Nordisk Medicin*, for Nov. 7, 1952, Dr. A. J. Hellem points out that of these 47 patients as many as 29 suffered from myocardial infarctions, 6 from angina pectoris, 3 from valvular disease of the heart with auricular fibrillation, and 9 from thrombophlebitis. As many as 35 patients were first treated as inpatients, and it was not till a later stage that their treatment was continued to outpatient care. Prothrombin values were determined by Owren's method, and great care was taken to initiate each patient into the principles of the treatment so that intelligent cooperation between physician and patient could be insured.

In most cases prothrombin determinations were carried out every day in hospital and more rarely at intervals of two to three days. The outpatient examinations were undertaken at weekly, and later at fortnightly, intervals. Before being discharged from hospital every patient was taught that bishydroxycoumarin is supposed to act as an anticoagulant and was warned of the risks entailed, such as that of severe hemorrhage after a dental extraction. The prothrombin levels were recorded graphically on paper ruled in millimeters used for both inpatient and outpatient treatment. This system of recording facilitated corrections of dosage and detection of fluctuations in the prothrombin level during treatment. As was to be expected, this treatment was followed by hemorrhages in some cases, but there was only one case, with severe hematuria and a fall of hemoglobin from 98% to 73%, that could be regarded as alarming. In this case the dosage of bishydroxycoumarin had been too large. Altogether there were only nine cases of hemorrhage in this material, but Dr. Hellem does not make any extravagant claims for it based on the clinical effects. He found that inpatient and outpatient treatment was equally effective in reducing the prothrombin level to the desired position. But he insists that the treatment and supervision of the patient require the closest attention of one and the same physician if they are to be effective.

SPAIN

Surgeon Found Guilty of Negligence.—For the first time a surgeon in Spain has been found, or declared, guilty by a court of having wrongfully injured a patient during an operation. The surgeon performed a laparotomy on the patient and unintentionally left the Kocher's forceps he had used during the operation in her abdomen. The facts were as follows: The surgeon performed an appendectomy and ovariectomy on the patient on July 7, 1947. During the course of the operation, the surgeon employed, among other surgical instruments, a hemostatic Kocher's forceps, which he forgot to remove at the end of the operation. It was found by the Seventh Department of the Provincial Court that failure to remove the forceps was due to negligence on the part of the surgeon. The evidence showed that the surgeon did not give the proper attention to the operative field at the end of the operation, and the accused confessed that, when he had finished the operation, he did not count the instruments he had used during it. For one and one-half years after the operation, the patient complained of acute abdominal pain and of other acute intestinal disorders. One year and nine months after the operation, the patient consulted other physicians and a diagnosis of intestinal obstruction, necessitating a new operation, was made. This second operation was performed on March 4, 1949. In the course of the operation, the Kocher's forceps were encountered in the abdomen of the patient. A loop of the small intestine was strangulated in the ring of one of the handles of the forceps and had become necrotic. As a consequence of the strangulation of the intestinal loop, failure of the peripheral vascular system occurred. Two days after the operation the patient died from cardiac syncope, following circulatory collapse. The jury emphasized that the patient had only the two aforementioned operations. The jury's verdict says, "the death of the patient resulted from the presence of the Kocher's forceps in her abdomen. The surgeon has the whole responsibility for his negligence, which caused the condition that terminated in death of the patient. The facts seem to show that the surgeon was careless and failed to fulfill his professional responsibility as expected in the cultural environment in which he practices. There is a causal connection between his forgetfulness and the death of the person, as the former is the immediate and direct cause of the latter. From a criminologic point of view, the accused was responsible for the results of the operation, in which he had direct, voluntary, and material participation." The jury considered the accused to have been guilty of temerary imprudence. A verdict of homicide was out of the question, as the accused was involuntarily negligent and had no malice in his acts. Therefore he was sentenced to prison for six months and a day, during which he was to be barred from carrying out any duty, either professional or public, and was to be also deprived of his right of suffrage. The accused was to pay the expenses of the law suit and also to pay to the legal heirs of the patient an indemnity of 50,000 pesetas. The lawyers of the defendant surgeon stated that they regarded the sentence harder than it should have been. They stated also that this sentence will affect the medical profession in general. They will file a petition under the law of cassation for annulling the sentence. The petition will be presented to the authorities in the court of appeals within the term established by the law.

CORRESPONDENCE

VACCINE FOR POLIOMYELITIS

To the Editor:—For many years I have followed the work of a number of investigators who were attempting to develop an effective vaccine for the prevention of paralytic poliomyelitis. In the March 28, 1953, issue of THE JOURNAL in a paper entitled "Studies in Human Subjects on Active Immunization Against Poliomyelitis: 1. A Preliminary Report of Experiments in Progress," Dr. Jonas E. Salk pointed out how the contributions of numerous investigators have resolved many of the basic problems leading to the reasonable expectation that a vaccine for poliomyelitis may now be achieved.

I have been kept informed of the progress of these investigations, and it seems to me that the recent paper by Dr. Salk provides substantial evidence that a practical vaccine against human paralytic poliomyelitis can be achieved by the use of virus propagated in tissue culture, rendered noninfectious by treatment with a solution of formaldehyde, and administered in the form of a mineral oil emulsion. It is evident that any investigator who possesses a promising preparation for the prevention of a human disease is faced with a decision either to conduct innumerable small-scale studies with relatively few subjects, in an effort to develop more effective preparations before widespread application, or to employ the experimental preparation in large numbers of human subjects even though the preparation may not yet possess all of the refinements ultimately desired. The temptation will be great to urge that the experimental vaccine studied by Dr. Salk be prepared for immediate widespread use. Such enthusiasm, however, should be tempered not only by the realization of what we do know but, perhaps even more, by what we do not know.

Because of the social as well as the scientific problems created by Dr. Salk's work, I suggested that the National Foundation for Infantile Paralysis meet with Dr. Salk to consider the future course of his work. The persons attending this meeting included: Miss Margaret A. Hickey, contributing editor, *Ladies Home Journal,* St. Louis; Messrs. Raymond Barrows, executive director, and Basil O'Connor, president, National Foundation for Infantile Paralysis; and Drs. Louis H. Bauer, President, American Medical Association; Rufus H. Fitzgerald, chancellor, University of Pittsburgh, Pittsburgh; Alan Gregg, vice-president, Rockefeller Foundation, New York; Rustin McIntosh, Carpentier Professor of Pediatrics, College of Physicians and Surgeons, Columbia University, New York; Thomas P. Murdock, member, Board of Trustees, American Medical Association; John D. Porterfield, director, Department of Health, State of Ohio, and secretary-treasurer, Association of State and Territorial Health Officers; David E. Price, assistant surgeon general, Public Health Service; Thomas M. Rivers, director, Hospital of the Rockefeller Institute for Medical Research, New York; Richard E. Shope, member, Rockefeller Institute for Medical Research, New York; Joseph E. Smadel, scientific director, Department of Virus and Rickettsial Diseases, Army Medical Research and Graduate School, Washington, D. C.; Max Theiler, director of laboratories of Division of Medicine and Public Health, Rockefeller Foundation, New York; Norman H. Topping, vice-president in charge of medical affairs, University of Pennsylvania, Philadelphia; Thomas B. Turner, professor of microbiology, School of Hygiene and Public Health, Johns Hopkins University, Baltimore; and Hart E. Van Riper, medical director, and Harry M. Weaver, director of research, National Foundation for Infantile Paralysis.

At this meeting, it was our privilege to hear from Dr. Salk a full and detailed account of the studies he has carried out to date. As a result of the critical evaluation that followed, this group recommended that (1) before large-scale field trials are initiated, additional studies involving increasing numbers of persons be undertaken to extend the experience already accumulated; (2) such studies be limited to Allegheny County, Pennsylvania; (3) such studies be stopped for that part of the summer of 1953 during which poliomyelitis might be prevalent in order to avoid instances of poliomyelitis occurring shortly after vaccination being erroneously attributed to the immunization procedure; and (4) these investigations be resumed on an ever-increasing scale after the poliomyelitis season is passed and that they be conducted in a sufficient number of communities to permit a controlled evaluation of the effectiveness of this preparation during the summer of 1954. There is every indication that the preparation in question is as safe as any other vaccine now widely used against diseases other than poliomyelitis. However, only by gradual extension in ever-increasing groups of persons and in a systematic fashion as herein indicated can this be established with the certainty required before testing the validity of the experimental vaccine against poliomyelitis under epidemic circumstances.

This letter is written with the knowledge and approval of the persons who attended the special meeting to consider this problem. The opinions herein expressed are conveyed to you in the hope that every assistance will be given to Dr. Salk so that it may be determined whether the preparation that he has developed is the long-sought, practical means for the control of human paralytic poliomyelitis. In conclusion I would like to emphasize Dr. Salk's own statement that, while the results obtained in his studies "can be regarded as encouraging, they should not be interpreted to indicate that a practical vaccine is now at hand."

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SMOKING AND THE CARDIOVASCULAR SYSTEM

To the Editor:—The text of the editorial in THE JOURNAL (**150:**1016 [Nov. 8] 1952) entitled "Smoking and the Cardiovascular System" constitutes a restrained and thoughtful approach to a difficult problem. Nevertheless, as in many similar analyses of the literature, an important physiological principle has been overlooked; i. e., the most potent stimulus to the formation of anastomotic vascular channels is ischemia. This has been repeatedly demonstrated experimentally and clinically. Consequently, one must give serious consideration to the possibility that smoking tobacco, through a vasoconstricting effect, might, over a period of time, actually serve as a stimulus to the formation of a greater functional vascular bed. The current policy of restricting the use of tobacco for the person with coronary or peripheral vascular disease may have an unphysiological basis, since the patient may be being denied the means of effectively withstanding a sudden major occlusion. A second although probably less significant factor, which has received little attention, is the possibility that in persons with lesser degrees of arterial insufficiency, reactive hyperemia may minimize the immediate vasoconstricting effects of smoking.

These factors assume special significance when it is realized that, exclusive of patients with Buerger's disease, in which the importance of restricting the use of tobacco is undeniable, and perhaps a few rare persons sensitive to tobacco, a true vasotoxic effect due to tobacco has not been convincingly demonstrated. While it is not my intention to advocate smoking as a means of developing a collateral vascular bed for patients with coronary or peripheral artery disease, I do suggest a more careful evaluation of the factors mentioned rather than continued acceptance of traditional but unproved concepts.

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BUREAU OF MEDICAL ECONOMIC RESEARCH

As promised in the foreword to the analysis of the Report of the Truman Commission on the Health Needs of the Nation (THE JOURNAL, *March 21, 1953, page 1032), the Director of the Bureau of Medical Economic Research has prepared an analysis of volumes 2 and 3. Volume 2 appears to be almost as important as volume 1; volume 3 is entirely a statistical compilation of data published elsewhere. Statements made by members of the Truman Commission at the recent meeting of the National Health Council have provided additional information regarding the* modus operandi *of the commission.*—ED.

APPENDIX—SPECIFIC COMMENTS ON VOLUMES 2 AND 3

Volume 2.—As noted in the March 21 issue of THE JOURNAL, the first half of volume 4 and all of volume 5 present testimony given by others to the commission. Hence these two volumes are not really the work of the commission except for the limited comments of commission members interspersed in the testimony of volume 5 and the second half of volume 4 containing a large number of tables and charts, many of which are required to round out the papers given by panel members. Some planning and editing, of course, of all of volume 5 and the first half of volume 4 were done by the commission and its staff.

Volume 2, America's Health Status, Needs and Resources, is quite easy to read because it has been well edited. Although its basic purpose is to elucidate the recommendations and findings contained in volume 1, it does not give evidence of controversy among the commission members as to how a particular sentence should be worded or a particular paragraph should be organized. At the recent meeting of the National Health Council in New York City, members of the commission indicated that one member had prepared a preliminary draft of volume 1 and submitted it to the other members of the commission. Each line was gone over carefully by most of the members of the commission and many compromises were reached. On the other hand, volume 2 was discussed by members of the commission, drafted by the staff and then edited by one person. Apparently the sole exception, as indicated by the footnote on page 135, was the excellent section on general practice prepared by Donald Clark, M.D., a commission member.

At the end of each section the pertinent recommendations of the commission are repeated. The text is interspersed with numerous short tables and charts which are helpful. At some places the omission of a table or a chart detracts from its value; for example, in the section on "Paramedical Personnel" a semi-logarithmic chart (II, 174) indicates an extremely rapid increase in the number of these workers in recent years, but there is no table to indicate that the combined number of nurses, x-ray technicians, medical technologists, nurse anesthetists, medical social workers, medical record librarians, occupational therapists, physical therapists, dieticians, etc., increased by about two-fifths between 1940 and 1950. The reader is forced to make a table for himself from the data given in volume 3. A 40 per cent increase of these other members of the medical care team between 1940 and 1950 helps the reader to evaluate the increase of only 17 per cent in the number of physicians. Had this rapid increase in the combined number of nonphysician members of the medical care team been pointed out clearly in tabular form, the reader would have been given a better basis for criticizing the repeated statements in volumes 1 and 2 regarding a national doctor shortage. These increases are related as the relatively large increase in the nonphysician members of the medical care team have greatly augmented the "output per physician." Hence data showing only the gains in the number of physicians or the number of physicians per 100,000 population clearly understate the gains in the supply of physicians' services.

Another type of omission appears to spring from a lack of knowledge of the literature; for example, the several definitions of group practice (II, 241) exclude the definition which has been used for many years in publications of the American Medical Association. A second example of unfamiliarity is evidenced in the commission's use of the material which we furnished on medical service areas. Nothing that we have written about these areas warrants the statement made in the report that the American Medical Association has "shown interest in regional organization" of the type described (II, 249). The difference between our data and the commission's statement revolves about the problem of sanctions—control by government, or individual initiative. Our study of medical service areas is an attempt to pinpoint the distribution of physicians but not to advance any theory of formal regional organization under either private or government direction. This misinterpretation of our own data may, however, be explained by the fact that we were able to furnish the commission only progress reports rather than a final report. (To the commission, regional cooperation apparently means something which is a first cousin to the agricultural extension service of our state universities—a process by which a medical school or a large hospital might supervise and raise the standards of physicians in hospitals in the small towns in the area.)

Several other comments of a statistical nature should be made. The failure of the staff statisticians to distinguish between low money income per capita and real income per capita in rural areas is again evidenced (II, 86). Generalizations regarding the percentage of income spent by families for medical care in different income groups before standardizing the age distribution of families in each group (II, 258) are as unwarranted here as in the other volumes. The statement that, "Fee-for-service payments appear to militate against early diagnosis," seems in strange contrast to the magnificent story of health progress achieved by a characteristically fee-for-service system. Although data are presented on the incomes of physicians and the average number of hours of work (II, 119), the report never provides in clear detail the average hourly rate of compensation so that it might be compared with the hourly rate of compensation of other economic groups. The average 1949 earnings of all physicians were $11,058, or $213 a week if we allow self-employed physicians vacations. On the basis of 56 hours of work per week the average straight-time hourly earnings would be $3.80; using the 40 hour week and allowing 28 hours extra pay for the extra 16 hours, the rate per hour was $3.10. Similar computations could have been made for physicians in independent practice as well as those in the specialty categories. Such hourly earnings data would have demonstrated to the American people that the long work week is the major factor in making the annual earnings of physicians high. Again the failure of the commission to bring out the simple relationships indicates, by omission, a desire to slant the information compiled.

Volume 2 incorporates some of the testimony given at a number of the panels held by the commission on special subjects—not the regional panels (public hearings) of volume 5. The acknowledgments (II, 306) present a complete list of the persons who participated in the 32 panels. Likewise the bibliography (II, 260-305) includes, among others, the published materials submitted to the commission at these panel sessions. The report does not claim that this is a complete bibliography. One vital omission is the illuminating analyses of selective service rejection statistics by Maurice H. Friedman, M.D.

The attention given to health progress seems insufficient especially in the section dealing with accidents (II, 63). Nowhere does the commission get up on the mountain top and view the role of accidents in our nation's health in true perspective. The commission had before it on more than one occasion the finding that fatal accidents cut off more years from the working lifetimes of the American people than any other cause of death. This may have been omitted for the purpose of playing down the rapidity of our health progress which has been responsible for the emergence of violence as the No. 1 destroyer of the working years of life.

This lack of perspective is also evidenced in the failure of this report—not just volume 2—to indicate clearly that the only goal in health progress is better health. It is a limited goal to be attained step by step and not attainable by one fell swoop. We enjoyed great health progress before this commission was established and shall continue to enjoy great health progress long after this report is forgotten. A positive program for health progress is not one which the commission would have us believe requires governmental intervention, governmental subsidies, or governmental direction. A positive program is one which attains positive results. The report fails to point out that we have had a positive health program in America for a long, long time!

Volume 2 does clearly establish that the commission does not believe in voluntary health insurance. "Private prepayment plans," the commission's term, include what might be called "panel medicine," schemes such as the Health Insurance Plan of Greater New York, which are not voluntary health insurance; they do not provide free choice of an individual physician. The union of prepayment with group practice to produce panel medicine is a combination which is quite unlike either of the two components. If a car owner were required to have the damaged fender of his car repaired only in garages owned by his insurance company he, too, would not be insured by a truly voluntary insurance plan. In a comparable way, only physicians belonging to groups approved by H. I. P. can be compensated by it for medical treatment of persons covered. Panel medicine is private medicine; it involves prepayment; but it is not voluntary health insurance. It is really a "cooperative" for the services of physicians are purchased at wholesale, the service is packaged into convenient units (an office call, an appendectomy), and sold at retail. Furthermore, the attempt to provide "comprehensive" medical coverages boosts the retail cost far above Blue Shield and other voluntary insurance costs. We confess that some of our own writings may have added to the confusion of terminology.

The estimates of the shortage of physicians (II, 183) have a familiar ring. There are four premises upon which forecasts of the 1960 shortage of physicians are based. These premises differ in detail but each premise assumes a shortage rather than proving one. Furthermore, the staff statisticians overestimate the number of deaths among physicians before 1960 by at least 8,000 and underestimate the probable number of additions to the medical population before 1960. But these are small flaws to point out when the premises themselves are so absurd.

We were never able to determine from volume 1, standing alone, whether the commission did or did not believe in a system of prices. Without the price system no free economy can exist. The statement, "The flat premium of the voluntary plan thus excludes many families who most need protection" (II, 256) although made with reference to national health insurance leaves us still in doubt about the true position of the commission on this vital question. This doubt is enhanced by the omission from the last section, "Financing Personal Health Services," (II, 253) of any reference to the function of personal savings in meeting a rainy day. If all people could buy shoes, groceries, and health insurance by paying a percentage of income, our free economy would be terminated.

Reading volume 2 after reading the other four volumes convinces us that the recommendations of the commission, in both volumes 1 and 2, could have been written during the first few meetings of the commission and without the great expense of preparing and publishing all of these materials. The principal attack of the commission is upon the physician. Despite the extraordinarily rapid rise in hospital costs, the hospitals are slighted throughout the five volumes. No member of the commission was a staunch defender of Blue Shield Plans or the other voluntary medical insurance underwritten by the commercial insurance companies. The stress of the commission upon the so-called comprehensive prepayment plans is in the direction of large groups of physicians. It seems to result also from the general notion that big business is better than little business and that large groups of physicians tied in with monopolistic prepayment plans (panel medicine) would provide better and cheaper medical care than would physicians in individual or partnership practice or in the other groups not tied in with monopolistic prepayment plans. In that sense and in that sense only can a reviewer predict that some big business executives may look with favor upon the general tone of this report; particularly those who believe that organizing medical services efficiently would be an easy task for the high-powered business executive. In the most general terms, we can say that the Truman Commission on the Health Needs of the Nation worships bigness as the royal road to providing comprehensive medical care for the American people—without ever really defining the term comprehensive, without ever realizing that many persons might prefer to purchase less and without ever considering that all human needs are relative.

Rereading volume 1 again after volume 2 makes it very difficult to disagree with those who predicted as early as January 1952 that the commission report would feature group practice combined with prepayment plans and a variety of federal subsidies. A different group of 15 members might have charted a very different course, depending somewhat upon their willingness to be guided by the information available.

Volume 3.—Volume 3, America's Health Status, Needs, and Resources—A Statistical Appendix, is entirely a staff job. We are told in the preface that the organization is similar to that of volume 2.

The 415 tables may be classified as follows: population, 31; mortality rates, 9; current health status, 17; chronic illness, 9; mental illness, 10; dental care, 10; environment, 12; accidents, 19; mothers and children, 16; industrial workers, 14; rural people, 7; migratory workers, 3; aged, 9; veterans and other federal beneficiaries, 11; physicians, 48; dentists and auxiliary workers, 23; nurses, 25; paramedical workers, 46; hospitals and related facilities, 24; public health services, 6; utilization of all health services, 6; of physicians, 23; of hospitals, 14; of dentists, 11; and of other medical services, 12. (It should be remembered that data on medical care costs and prices are presented in the second half of volume 4.)

Thirty-eight of the 415 tables present no data for any year later than 1940, and 55 of the 415 tables present no data for years later than 1945.

The acknowledgments (III, 299) indicate that practically all of the tables have already been published either by agencies of the federal government, the New York State Department of Health, the United Nations, or by 31 private organizations. Although any statistician working in this field welcomes compilations of previously published data for his own personal use and has a keen appreciation of the tedious work involved in such a large compilation, the actual value of this volume from the standpoint of the public interest is open to serious doubts. Furthermore, a careful statistician would check the original source before using any figure in volume 3, a secondary source. More specifically, one can question the necessity for giving 31 tables on population drawn largely from the Bureau of the Census.

MEDICAL MOTION PICTURES

Fears of Children: Emotions of Everyday Living Series: 16 mm., black and white, sound, showing time 29 minutes. Produced in 1951 by Julien Bryan for the National Assn. for Mental Health and the Oklahoma Department of Mental Health. Procurable on purchase ($115.00) from International Film Bureau, 57 E. Jackson Blvd., Chicago 4, or on loan from your state health department or local film library.

This film goes through a day in the life of a supposedly typical upper middle class family. Their only child is obviously disturbed. Through the day's routine, one is shown all the mistakes the parents are making. They restrict the child's conversations and activities in order to keep things peaceful for the father, rather than merely separating their activities. The 5-year-old child is refused a chance to express his feelings or communicate with his parents who keep him out of their circle of affection and punish him for his attempts to break into it. He is threatened with bodily harm in harmless situations, and his problem is openly discussed in front of him. The parents disagree about the way in which he should be guided, comparing him with other children, threatening him with the father's disapproval, and forcing him into situations about which fear has been built up.

A friend tries to explain to the mother why 5-year-old boys become angry at their fathers, why a child needs a chance to express his feelings, how parents should accept these expressions, and why the mother should not use threats that encourage fear. After giving considerable thought to these new ideas, she tries to interpret them to the father, who has difficulty accepting them because of unresolved conflicts left over from his own childhood. The use of the friend is good in that it shows that someone else had to face the same problem, sought help, and was able to work it out. The father's behavior at the end makes you think he is trying to apply the new principles. The characters are all a little too morose to be true; the child is far from typical of a normal 5-year-old; he more closely resembles a very sick child in need of intensive treatment. The photographic and sound quality are very good. The exaggerated presentation would tend to be threatening to parents. The film is acceptable only when a qualified discussion leader is available to guide the discussion afterward.

Immunization Against Infectious Diseases: 16 mm., color, silent, showing time 43 minutes. Prepared by Charles F. McKhann, M.D., and Harry A. Towsley, M.D., University of Michigan Hospital, Ann Arbor. Produced in 1942 by and procurable on loan from Lederle Laboratories Division, American Cyanamid Company, 30 Rockefeller Plaza, New York 20.

This motion picture is a discussion of active immunization for diphtheria, scarlet fever, tetanus, pertussis, typhoid fever, cholera, plague, smallpox, rabies, encephalomyelitis (equine origin), yellow fever, Rocky Mountain spotted fever, and typhus fever. For the first four, passive immunization is also practicable as well as for measles, chickenpox, and mumps. Each of these diseases comprises a section wherein maps show the geographical distribution, patients exhibit typical diagnostic signs, and the method of immunization is outlined. Precautions advisable before giving heterologous antiserums are emphasized. The film summary advises the proper times of immunization against the infectious diseases.

The film is somewhat out-of-date but it is still useful. These conditions are handled individually, merely mentioning in passing that combined toxoid for diphtheria and tetanus is available while now the standard practice is to combine not only diphtheria and tetanus but also pertussis antigens. Since this film was produced, there has been a general scaling downward of the ages of immunization. In this film there is a fair stress on scarlet fever immunization, which is now looked on with some question, and there was a great deal of work done on immunization for tropical diseases during the war that is not reflected in this picture. The photography is satisfactory. This film should be revised and illustrated with new charts and statistical information. The film includes fair clinical pictures but could not be shown to physicians in training without supplementary remarks from someone who is familiar with current immunization procedures.

Phallectomy for Carcinoma: 16 mm., color, silent, showing time 34 minutes. Prepared by Leander W. Riba, M.D., and Harold Method, M.D., Northwestern University Medical School. Produced in 1952. Procurable on loan from Leander W. Riba, M.D., 720 N. Michigan Ave., Chicago 11.

This film shows the treatment of an advanced carcinoma of the penis by radical surgical excision. The first step in the procedure is amputation of the penis down to the stumps of the corpora cavernosa. The author considers it unnecessary to completely bisect the scrotum. The new urethral meatus is formed in the midperineum through a small stab incision. Inguinal, superficial, and deep femoral gland dissection en masse are shown in the second half of the film. This is accomplished by a long curved incision extending from the apex of the femoral triangle upward and outward toward the anterior superior spine of the ilium. Unfortunately, for purposes of orientation, the exact location of the femoral and inguinal incision is not demonstrated preoperatively. Adequate hemostasis is maintained throughout the procedure.

The lighting is generally poor, and there is a lack of close-up views of various aspects of the surgical procedure. It would be desirable to show preoperative close-up views of the lesion of the penis. Essentially, the surgical technique is clear; however, some sequences are out of focus making it difficult to follow the exact steps of the technique. The entire picture consists of straight photography. There are no drawings, animation, or supplementary visual material. This is a record film of a rare surgical procedure and as such has very little fundamental teaching value. It would be of interest chiefly to urologists and to those physicians associated with cancer detection centers.

Farewell to Childhood: Emotions of Everyday Living Series: 16 mm., black and white, sound, showing time 23 minutes. Produced in 1951 by Herbert Kerkow, Inc., New York, for the National Association for Mental Health and the North Carolina Board of Health. Procurable on purchase ($85.00) from International Film Bureau, 57 E. Jackson Blvd., Chicago 4, or on loan from your state health department or local film library.

This film shows the basic conflicts between adolescents who want very much to be free of parental restrictions and their parents who are bewildered by the sudden behavior changes and moods of their children. The rivalry between the mother and the daughter with the father "in the middle" is brought out, perhaps in an exaggerated manner. The mother seems to lack satisfactions in her own life and to be overly jealous of her child's attachment to the school counselor. The girl's daydreams of escape from her present life are typical. When the parents go to see the school counselor, they are helped to see that their child's behavior is typical of her age and that she is like the others of her groups. She needs their emotional support at the same time that she needs more freedom. Also, the girl is helped to understand her parents' feelings. The photographic and sound quality are very good. This film will be of interest to groups of parents, even without a discussion leader, if the group has some orientation and ability to handle discussion independently.

Resection of a Congenital Diverticulum of the Left Ventricle: 16 mm., color, silent, showing time 17 minutes at sound speed. Prepared by Willis J. Potts, M.D., and Arthur De Boer, M.D., The Children's Memorial Hospital, Chicago. Produced in 1952 by and procurable on loan (service charge $5.00) from Mervin LaRue, Inc., 159 E. Chicago Ave., Chicago 11.

This film demonstrates the authors' technique during the spectacular surgical excision of a rare congenital diverticulum of the apex of the left ventricle. The patient, an 11-year-old boy, is shown before surgery and again six weeks later. A preoperative roentgenogram reveals a dextrocardia. Details of the surgery are demonstrated. Considerable footage is devoted to dissection of the anomaly and the placing of sutures. A specially designed multitoothed clamp is presented, and then this instrument is used to occlude the base of the diverticulum before its excision. Before closure, the ventral hernia is repaired. The surgical technique is very good. Since this is a very rare lesion, this film is recommended mainly for showing to physicians who are receiving graduate training in thoracic surgery and to pediatricians. The photography is satisfactory.

MEDICAL LITERATURE ABSTRACTS

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Behavior of Mercury in Animal Organism Following Inhalation. W. F. Ashe, E. J. Largent, F. R. Dutra and others.—p. 19.

Baritosis: Report of Case. E. P. Pendergrass and R. R. Greening.—p. 44.

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*Therapy of X-Irradiation Syndrome with Terramycin. M. P. Coulter, F. W. Furth and J. W. Howland.—p. 875.

*Pituitary Necrosis in Routine Necropsies. A. Plaut.—p. 883.

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Structural Alterations Within Aortic Intima in Infancy and Childhood. J. Y. Prior and D. B. Jones.—p. 937.

"Untreated" Bronchogenic Carcinoma: Report of 35 Cases. G. R. Tanner and H. Gordon.—p. 953.

Oxytetracycline Therapy in the Irradiation Syndrome.—The high morbidity and mortality in dogs receiving a large dose of x-rays to the whole body is partly explained by the diminished antigen-antibody response, leukopenia, and destruction of lymphatic tissue that follows exposure to large doses of irradiation. Oxytetracycline ("terramycin"), a nontoxic antibiotic with a wide bacterial spectrum, seemed worthy of trial in the prophylaxis of infections likely to occur during the acute radiation syndrome. Treatment of dogs with oxytetracycline following exposure to large doses of x-rays resulted in a reduction in the mortality from 12 of 13 untreated controls to 7 of 14 of the group treated with oxytetracycline. Treated animals showed no delay in onset of symptoms as had been observed in a previous study in animals treated with aureomycin. Bacteriological studies showed no apparent difference in the incidence of positive blood cultures between treated and control animals. Thirty per cent of the organisms recovered from control animals were resistant to oxytetracycline; 69% of the organisms from treated animals were resistant. No differences were noted in hematological and pathological observations in the two groups. Severe hemorrhage was the major cause of death; it was observed at necropsy in both groups of animals. The mode of action of oxytetracycline in reducing the mortality was not established by this investigation.

Pituitary Necrosis in Routine Necropsies.—The subtotal necrosis of the anterior pituitary that is observed after childbirth is ascribed to the anoxemia or circulatory disturbance associated with shock and severe hemorrhage. Since severe circulatory disturbance may precede death from other causes, necrosis of the pituitary is not necessarily restricted to death after childbirth. Plaut, having observed small foci of necrosis unexpectedly in pituitaries, studied the pituitaries by horizontal and sagittal sectioning in necropsies on 149 unselected male cadavers. He detected necrosis in the anterior pituitary in 13 cases. These necrotic areas could never be explained by embolic or thrombotic occlusion of vessels. Necrosis in the anterior pituitary was less frequent after the age of 55, but it seemed to be frequent in hypertension. Otherwise, no correlation with clinical disease was evident. Plaut believes that the subtotal postpartum necrosis of the anterior pituitary gland described by Sheehan represents an exaggerated degree of a process that takes place frequently during the last days of life, without a close relationship to the disease from which the patient is dying.

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Influence of Thyroid Hormone on Respiration of Cardiac Tissue. W. C. Ullrick and W. V. Whitehorn.—p. 407.

Influence of Hypophysis on Pulmonary Injury Induced by Exposure to Oxygen at High Pressure and by Pneumococcus. J. W. Bean and P. C. Johnson.—p. 451.

Effect of Dibenamine on Renal Blood Flow in Hemorrhagic Shock. M. Brandfonbrener and H. M. Geller.—p. 482.

Antagonism Between Cortisone and Somatotrophic Hormone.—According to Selye, some of the most striking effects of the predominantly glucocorticoid compounds, such as cortisone (inhibition of somatic growth, atrophy of the lymphatic organs, inhibition of inflammatory responses to topical injury, and decreased resistance to certain infections) are directly opposed to the actions of the growth hormone or somatotrophic hormone. In this paper he discusses experiments designed to clarify the quantitative aspects of this antagonism. Experiments were performed on rats treated with cortisone alone, with somatotrophic hormone alone, and with combinations of these two hormonal principles at different dose levels. It was found that somatotrophic hormone not only compensates for the growth inhibitory effect of cortisone but the two hormones are also antagonistic with regard to their effect on a variety of other target organs. In particular, the effects of cortisone on the involution of the adrenal cortex and of the thymus as well as its antiphlogistic effect were counteracted by the simultaneous administration of somatotrophic hormone. Curiously, even those organs that normally undergo an absolute or relative increase in size as a result of either cortisone or somatotrophic hormone treatment, e. g., the heart, kidney, and liver are maintained in an essentially normal weight range if both hormones are given conjointly.

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Titles marked with an asterisk (*) are abstracted.

Am. J. Tropical Medicine & Hygiene, Baltimore

1:917-1064 (Nov.) 1952. **Partial Index**

Exo-Erythrocytic Stages of Plasmodium Falciparum. G. M. Jeffery, G. B. Wolcott, M. D. Young and D. Williams Jr.—p. 917.
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Chloramphenicol in Malaria. Fco. Ruiz-Sánchez, M. Quezada, M. Paredes and others—p. 936.
Hepatomegaly in Human and Experimental Amebic Colitis. G. M. Carrera and E. H. Sadun.—p. 962.
Effect of Protein Deficient Diets on Susceptibility of Guinea Pigs to Infection with Endamoeba Histolytica. G. M. Carrera, E. H. Sadun and E. C. Faust.—p. 966.
Effect of Blacktongue-Producing Diet on Experimental Amebiasis in Dogs. J. E. Larsh Jr.—p. 970.
Treatment of Case of Balantidial Dysentery with Terramycin. P. P Weinstein, B. T. Garfinkel and M. M. Miller.—p. 980.
Tropical Rat Mite (Liponyssus Bacoti) as an Experimental Vector of Coxsackie Virus. M. Schwab, R. Allen and S. E. Sulkin.—p. 982.
Effect of "B" Virus (Strain No. 1) in Syrian Hamster. R. L. Reagan, W. C. Day, M. P. Harmon and A. L. Brueckner.—p. 987.
Survival of Ingested Salmonella in Cockroach Periplaneta Americana. R. C. Jung and M. F. Shaffer.—p. 990.
The Name "Leprosy." F. C. Lendrum.—p. 999.
Preliminary Report on "Periodic Tendency" of Microfilariae of Wuchereria Bancrofti Observed in Tahiti, French Oceania. S. A. Edgar, H. K. Beye and R. Mille.—p. 1009.
Experimental Study on Importance of Early Antivenin Treatment in Snake Bite. W. H. A. Schöttler.—p. 1038.

Annals of Surgery, Philadelphia

137:1-144 (Jan.) 1953. **Partial Index**

Architectural Basis of Pulmonary Ventilation. E. D. Churchill.—p. 1.
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Aneurysms of Middle Cerebral Artery. E. Campbell and C. W. Burklund.—p. 18.
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Evacuation of Urine by Ileal Segments in Man. F. W. Klinge and E. M. Bricker.—p. 36.
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Lumbar Sympathectomy for Peripheral Arteriosclerosis. L. T. Palumbo, L. F. Quirin and R. W. Conkling.—p. 61.
*Acute Peptic Ulcers as Complication of Surgery. W. V. McDonnell and J. F. McCloskey.—p. 67.
Lobectomy for Bronchiectasis. J. H. Forsee and P. E. J. Klinger.—p. 74.
Effect of Implanted Tantalum Mesh on Growth of Young Individuals. A. R. Koontz and W. S. Coxe.—p. 77.
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Evaluation of Hepatic and Splenic Artery Ligation for Portal Hypertension, with a Case Report. E. J. Jahnke Jr., S. F. Seeley and E. D. Palmer.—p. 98.
Post-Traumatic Intermittent Splenic Hemorrhage: Case Report. G. A. Olander and A. F. Reimann.—p. 104.
Splenic Arterial Aneurysm. J. S. Berger, J. H. Forsee and J. N. Furst.—p. 108.
Traumatic Rupture of Thoracic Aorta: Case Report. W. H. Kastl.—p. 111.
*Rupture of Heart During Cardiac Massage. E. S. Hurwitt and B. Seidenberg.—p. 115.

Acute Peptic Ulcers as a Complication of Surgery.—The association of acute ulcerations of the gastric and duodenal mucosa with central nervous system lesions and severe burns has been known for a long time, but peptic ulcers following surgical procedures have been noted only occasionally. McDonnell and McCloskey examined the records of 1,781 consecutive autopsies performed during the five years 1945 and 1950. In this group there were 243 cases in which death occurred within two months of operation performed on other than the central nervous system. Acute peptic ulcers were found in 8 of these 243 patients (3.24%). Similar ulcerations were found in 5 of 179 patients in whom central nervous system lesions were found at autopsy, an incidence of 2.78%. Thus peptic ulcer as a postoperative complication is rather common, and it should be remembered that these ulcers may cause hemorrhages or may perforate. Since most of the cases reviewed here were studied clinically before attention was focused on the adrenal gland and the stress phenomenon, and since no studies were made on the adrenal function, it cannot be definitely stated that acute postoperative peptic ulcers are associated with overproduction of corticotropic hormone, but it seems probable that the acute peptic ulcers associated with surgical procedures, burns, and intracranial lesions are a result of the body's exposure to stress.

Rupture of Heart During Cardiac Massage.—A woman, aged 69, with arteriosclerotic and hypertensive heart disease, was admitted to the hospital with both renal and pulmonary infarction. On the fourth hospital day she suddenly felt agonizing pain in the lumbosacral region radiating down both legs. Her legs were cool and cyanotic, peripheral pulsations were absent, and cutaneous sensation was diminished. The diagnosis of saddle embolus to the aorta was made, and aortic embolectomy was done three and one-half hours after the onset of the acute episode. Cardiac arrest occurred during closure of the abdominal wall. Attempted cardiac resuscitation was complicated by rupture of the right ventricle. The thumb of the surgeon had penetrated an area of softening below the auriculoventricular groove. A clamp placed across the rent also cut through the soft tissue and the tissues were too friable to hold sutures. It proved impossible to maintain the cardiac beat and close the rupture in the myocardium. The patchy fatty infiltration of the myocardium probably helps to explain the rupture.

California Medicine, San Francisco

78:1-86 (Jan.) 1953

Two Kinds of Death of William Harvey. W. S. McCann.—p. 1.
*Serum Lipids in Normal and Abnormal Subjects: Observations on Controlled Experiments. L. W. Kinsell, G. Michaels, L. DeWind and others.—p. 5.
Subperitoneal Hemorrhage. G. F. Cushman.—p. 11.
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Dissimilar Allergic Disease in Identical Twins: Study of Psychosomatic Aspects. R. H. Crede, C. T. Carman, R. D. Whaley and I. C. Schumacher.—p. 25.
*Surgical Treatment of Infantile Hydrocephalus. T. J. Putnam.—p. 29.
Hearing Impairment in Children. H. W. Kohlmoos.—p. 33.
Screening Tests for Diabetes Detection: Combined with Chest X-Ray Survey. B. K. Milmore, H. B. Flanders, H. L. Blum and M. Mills.—p. 37.
Chemical Agents in Neoplastic Diseases: Evaluation of Chemotherapeutic Substances for Clinical Management. H. R. Bierman.—p. 44.

Serum Lipids in Normal and Abnormal Persons.—The relationship of diet to serum lipids and to atherosclerosis is controversial. As part of a program designed to evaluate hormonal factors that regulate fat oxidation, 14 patients with chronic diseases such as rheumatoid arthritis and thyrotoxicosis were maintained on pure fat diets and on diets containing only fat and protein. A second group of 24 elderly patients with diabetes, all with major evidence of atherosclerosis, including severe peripheral vascular disease and major evidence of coronary artery and cerebrovascular disease, received relatively constant "diabetic" diets. As a result of their laboratory observations on these two groups of patients, the authors make the following statements: The intake of a large amount of vegetable fat is compatible with a quite impressive fall in serum content of cholesterol and phospholipids. It is not known at present whether this is referable to the lack of cholesterol and of phospholipids in the vegetable fat, to the presence of some material that actually modifies lipid metabolism, or to the absence of factors in other foods that are in a normal diet. The addition of a very large amount of cholesterol to the high-fat diet in one patient resulted in no increase in serum content of cholesterol. There was no obvious correlation between serum content of any of the lipids studied (total cholesterol, cholesterol esters, phospholipids, and lipoprotein) and the severity or rate of progression of the atherosclerotic process in the group of elderly diabetic patients with advanced arteriosclerosis. Coronary occlusion occurred in a patient with one of the lowest levels of cholesterol and of lipoprotein. Close linear correlation was observed between the serum content of phospholipids and of serum cholesterol esters, between lipoproteins and serum cholesterol esters, and between lipoproteins and serum total cholesterol. The index of correlation between cho-

lesterol and lipoproteins was almost identical with that reported by Keys in reevaluation of data previously reported by Gofman and co-workers. At present no positive clinical implications are suggested.

Surgical Treatment of Infantile Hydrocephalus.—In an earlier series of endoscopic coagulations of the choroid plexuses for the relief of infantile hydrocephalus, Putnam reported 11 operative deaths in the first 17 patients operated on. Since that time 20 operations of this type have been performed on 10 patients with no operative deaths. Three of the 10 patients operated on between 1943 and 1946 could not be followed continuously but were doing well in 1946. Four of the seven patients operated on since 1947 are still alive and doing well, with maintenance or improvement of mentality following relief of pressure. One patient who was incompletely relieved by cauterization of the choroid plexuses and then by an additional ventriculomastoidostomy has done well since drainage was established by means of a tube passing from the subarachnoid space to the peritoneal cavity. One was apparently relieved of hydrocephalus but died of unrelated causes. One died following a third attempt at ventriculostomy. Endoscopic coagulation of the choroid plexuses has substantially decreased the pressure in all patients and has brought it within normal limits in all patients in whom it was performed before the head became grossly enlarged. When the operation was performed before deterioration began, the results were uniformly excellent. Infantile hydrocephalus is a common condition and is easy to recognize even in early stages. The operation of endoscopic coagulation of the choroid plexuses with certain added technical refinements, such as suturing of the pia to the dura, suture of the periosteum over the suture line, and draining of the ventricle through a tiny plastic tube, entails little hazard and offers an excellent prospect of relief in early cases.

Delaware State Medical Journal, Wilmington

24:323-360 (Dec.) 1952

Laboratory Tests in Study of Atherosclerosis. O. J. Pollak.—p. 323.
Clinical Manifestations of Arteriosclerotic Disease. A. Tormet.—p. 327.
Case of Agenesis of Portion of Small Intestine in Newborn. H. W. Smith. —p. 332.

Diabetes, New York

1:425-524 (Nov.-Dec.) 1952

Serum Lipids and Lipoproteins in Diabetic Glomerulosclerosis. H. Engelberg, J. Gofman and H. Jones.—p. 425.
*Serum Lipoproteins and Cholesterol Levels in Normal Subjects and in Young Patients with Diabetes in Relation to Vascular Complications. N. R. Keiding, G. V. Mann, H. F. Root and others.—p. 434.
Lipoprotein Molecules, Cholesterol and Atherosclerosis in Diabetes Mellitus. J. H. Barach and A. D. Lowy.—p. 441.
Ultracentrifugal Studies of Lipoproteins in Diabetic Sera. M. Hanig and M. A. Lauffer.—p. 447.
*Degenerative Vascular Complications in Juvenile Diabetes Mellitus Treated with "Free Diet." Y. Larsson, A. Lichtenstein and K. G. Ploman. —p. 449.

Lipoproteins and Cholesterol Levels in Relation to Vascular Complications in Diabetes.—Although young diabetic patients may survive with insulin treatment for 10 to 15 years without difficulty, thereafter vascular disease, particularly lesions in the eyes and kidneys, becomes distressingly frequent. These patients offer an opportunity for the study of the nature of arteriosclerosis, uncomplicated by other chronic diseases frequently present in older subjects. A long-term study of the relationship between the degree of control of diabetes by means of insulin and diet and the frequency or severity of these complications has been in progress for several years. Since Gofman has related certain of the lipoproteins in the blood serum to the vascular changes in coronary atherosclerosis, the application of this method of study to young diabetic patients seemed advisable. Keiding and co-workers compared the serum cholesterol and lipoproteins of the S_f12-20, S_f 21-35 and S_f 35-100 classes in 218 diabetic patients with similar data obtained from 691 normal subjects. It appears that the severity (as measured by insulin dosage) and the duration of diabetes are not important factors in determining the levels of serum lipoproteins and cholesterol in patients under treatment with insulin for periods up to 25 years. The classification of 144 young patients with diabetes of more than 10 years' duration into three classes of control revealed higher mean levels of the serum lipids in the subjects with poor control. Levels of the S_f 12-20 lipoproteins exceeding 50 mg. per 100 cc. occurred in 32% of patients with poor control, 17% of patients with fair control, and 10% of patients with good control. In 26 patients with diabetic nephropathy all of the serum lipid components were elevated in comparison with values obtained in 118 subjects without renal disease. The relationship between the presence of retinitis and elevated values of the S_f 12-20 lipoproteins was statistically significant. Arterial calcification showed a much less striking relationship to this liproprotein.

Vascular Complication in Diabetics on "Free Diet."—Observations were made in 247 cases of diabetes with onset during childhood. All patients received controlled insulin treatment without dietary restrictions, the "free diet" being identical with that taken by healthy children. The following factors were regarded as indicative of good control: (1) normal vitality, height and weight, normal hunger and thirst, and absence of hypoglycemic symptoms; (2) normal diuresis; (3) urinary glucose level not exceeding 40 gm. in 24 hours, but in the majority the amount of glucose in the urine seldom exceeded 10 to 20 gm. in 24 hours; (4) absence of ketonuria; (5) fasting blood sugar level preferably not exceeding 200 mg. per 100 cc., although the 24 hour curve may show considerable variations. The patients are seen by a physician at regular intervals. During the first year of treatment the patient is seen about once a month; later on, when the disease has become stabilized, the patient is seen about once every second or third month. Thus although the diet is free, the patients are under control. Diabetic changes in the eyes took the form of diabetic retinopathy, diabetic cataract, and the rare iris lesion rubeosis iridis. Particular attention was given to retinopathy. Investigations on the incidence of retinopathy in 187 cases revealed that 125, or about two-thirds were free from such changes, but after diabetes had persisted for more than 15 years, 12% of the patients had proliferative retinitis. Diabetic nephropathy appeared after diabetes had persisted for at least 10 years, the first sign being albuminuria, which was at first sporadic, later constant. After more than 15 years of diabetes, 30.3% had albuminuria. Despite albuminuria, the patient may be free of symptoms for years. Urinary infection occurs only occasionally. Renal insufficiency, with hypoproteinemia, edema, hypertension, and uremia, did not appear until the terminal stage. After 15 years of diabetes, roentgenologic evidence of vascular calcification in the lower extremities was found in 14.3%. Comparing these results with those obtained by observers who insist on measured diets, the authors find that the incidence of degenerative vascular complications is not higher than in those treated with restricted diets. Therefore, they consider their treatment preferable, because it offers diabetic children a chance of a more normal life. The problem of degenerative vascular complications in diabetes seems not a problem of control alone; there must be other, still unknown etiological factors, inherent in the disease itself.

Endocrinology, Springfield, Ill.

51:349-460 (Nov.) 1952. **Partial Index**

Enzymatic Digestion of Beef Thyrotropic Hormone with Papain. I. G. Fels, M. E. Simpson, A. Sverdrup and H. M. Evans.—p. 349.
Serum Potassium and Electrocardiographic Changes in Adrenalectomized Dogs Maintained on Cortisone Acetate. W. W. Swingle, G. Barlow, E. Collins and E. J. Fedor.—p. 353.
Effect of Partial Adrenal Cortical Atrophy on Course of Alloxan Diabetes. J. Nichols and H. L. Sheehan.—p. 362.
Antagonistic Effects of Estrogen and Progesterone on Staircase Phenomenon in Uterine Muscle. A. I. Csapo and G. W. Corner.—p. 378.
Effect of Administration of Estrogens on Renin-Substrate (Hypertensinogen) Content of Rat Plasma. O. M. Helmer and R. S. Griffith. —p. 421.
Role of Gastrointestinal Tract, Including Liver, in Metabolism of Radiothyroxine. A. Albert and F. R. Keating Jr.—p. 427.

Florida Medical Association Journal, Jacksonville

39:473-546 (Jan.) 1953

Use of Prostheses in Head and Neck of Femur. H. G. Cole and A. H. Weiland.—p. 487.
Headache Problem and the Otolaryngologist. M. A. Lischkoff.—p. 491.
Healed Dissecting Thoracic Aneurysm, Coexisting with Saccular Thoracic Aneurysm and Ruptured Abdominal Aneurysm: Report of Case. H. M. Rogers.—p 495.
Diabetic Neuropathy. S. Davidson.—p. 500.
Use of Antihistamines as Local Anesthetic Agents. F. J. Stubbart. —p. 505.
Study of Medical Indigence Based Upon State Cancer and Diabetes Control Program. L. L. Parks.—p. 507.

GP (J. Am. Acad. Gen Practice), Kansas City, Mo.

7:1-202 (Jan.) 1953

Treatment of Frostbite. G. H. Pratt.—p. 34.
Modern Management of Inguinal Hernia. A. R. Koontz.—p. 43.
Therapy of Chronic Pulmonary Emphysema. M. S. Segal and M. J. Dulfano.—p. 56.
Newer Concepts in Treating Obesity. S. C. Freed.—p. 63.
Psychotherapy—How to Guide Interviews. I. Stevenson.—p. 69.
Practical Therapeutics—Management of Rheumatic Fever. B. J. Walsh. —p. 84.

Illinois Medical Journal, Chicago

103:1-66 (Jan.) 1953

Modern Trends in Surgical Management of Malignant Lesions of Stomach and Colon. C. J. Hunt.—p. 14.
Surgical Problems in Aged. H. A. Oberhelman.—p. 23.
Some Features of Pathological—Physiology of Congestive Heart Failure. A. G. Mulder.—p. 28.
Bronchoscopy: Re Bronchitis and Chronic Pulmonary Abscess. J. Shanks. —p. 30.
Common Neurosurgical Problems in General Practice. H. C. Voris. —p. 33.
Review of Some Concepts in Psychiatry. H. H. Garner.—p. 36.
What Does the Lung Do Besides Breathing? F. K. Hick, G. G. Jackson, R. M. Kark and others.—p. 38.
Medical Education for General Practice. J. J. Sheinin.—p. 41.
Pathophysiology of Jaundice. M. M. Kirshen.—p. 45.
Fatty Inguinal Hernia. B. H. Carlson, R. Kosterlitz, J. M. Greene and E. I. Greene.—p. 48.
Unusual Postoperative Ventral Hernia. F. J. Saletta and G. J. Rukstinat. —p. 50.

Industrial Medicine and Surgery, Chicago

22:1-42 (Jan.) 1953. **Partial Index**

*Pathological Effects from Work in Cold Environments. F. M. Troisi, A. Amorati and O. Bonazzi.—p. 11.
Treatment of Burns. G. K. Lewis.—p. 14.
*Patch Tests. G. E. Morris.—p. 19.
Plastic Surgical Closure of Chronic Open Wounds of Leg. P. W. Greeley. —p. 22.
Industry's Stake in Rehabilitation of Problem Drinkers. G. F. Wilkins. —p. 29.

Pathological Effects of Work in Cold Environments.—Studies were made on 66 workers in meat preservation plants, where the temperature was kept at from 0 to 2 C (32 to 35 F). The histories of these workers indicated a high incidence of chronic muscle and joint pains and of upper respiratory tract infections. None revealed a history of rheumatic fever, however, and only rarely had there been cases of bronchopneumonia. On the whole, these workers had undergone a remarkable acclimatization. Arterial hypotension was found in 14%, with readings between 100 and 110 mm. Hg, while another 10% revealed values between 110 and 120 mm. Hg. Laboratory examinations carried out on 16 of the 66 workers included determination of the alkali reserve, blood glutathione rate, total blood protein, colloidal state plasma tests, chloride, sodium and potassium levels in plasma, red cells, and total blood. These examinations revealed that there was a tendency to depression in the alkali reserve and glutathione rate, and a diminution in the chlorine and sodium levels, but potassium was increased. These findings combined with the arterial hypotension suggest that a mild hypoadrenalism may exist, resulting from the unusual working conditions.

Patch Tests.—In the determination of the cause of contact dermatitis the suspected sensitizer or irritant, properly diluted, is applied to the unbroken skin, and, after being covered with a piece of linen and a larger piece of cellophane, is then secured by a still larger square of adhesive. An alternate method is to have a piece of linen, soaked in a solution of the substance, similarly applied. The purpose of the cellophane is to separate the site of contact of the skin with the adhesive from the site of the tested substance. If this is not done, reaction from the adhesive may run into the area of the tested substance and give rise to a false positive reaction. Should the patient be highly sensitive to adhesive, or if a solid object such as a hairpin is to be tested, the test object or substance should be covered with a moisture-proof material and held to the skin by cotton bandages. The patch test customarily is left in place for from 24 to 48 hours, then is removed, and the reaction of the skin is noted. Lists of the results of testing chemicals on normal subjects have been published, but it should be remembered that the eczematized skin reacts more readily to chemicals than normal skin. Patch tests should not be applied if the patient has a generalized skin disease. Testing at such a time not only may show false positive reaction but may cause an exacerbation of the existing skin condition. Primary cutaneous irritants should not be used for patch testing. They include kerosene, gasoline, and strong solutions of acids, bases, and solvents. Primary irritants must be distinguished from cutaneous sensitizers. The latter are agents (such as cosmetics, penicillin, dyes, and nail polish) that do not cause demonstrable cutaneous changes on first contact but may effect changes in the skin so that after five to seven days or more further contact on the same or other parts of the body will cause dermatitis. The "open patch test" should be tried when the patient has been in contact with a volatile substance and has broken out with an eruption following slight exposure to this volatile substance. Properly applied and interpreted, the patch test is a valuable diagnostic aid, but it is impossible to rely on it in all cases of externally caused dermatitis.

International Journal of Leprosy, New Orleans

20:317-428 (July-Sept.) 1952

*Treatment of Leprotic Reaction (Lepromatous Leprosy Reaction) with Plasma. F. Contreras, J. Guillen, E. Torrella and M. Alcaraz.—p. 317.
Changes in Anterior Nasal Spine and Alveolar Process of Maxillary Bone in Leprosy. V. M. Christensen, S. N. Bakke, R. S. Melsom and E. Waaler.—p. 335.
Specific Tissue Alterations in Leprous Skin: I. Transformation of Tuberculin Reaction in Leprous Patients into Leproma-Like Lesions. F. Sagher, E. Kocsard and E. Liban.—p. 341.
Changes in Lepromin and Tuberculin Reactions of Lepromin-Negative Leprosy Patients After Vaccination with BCG. J. Convit, E. Rassi, F. C. Rodriguez and R. Contreras.—p. 347.
Nonchromogenic Culture of Acid-Fast Bacillus Isolated from Nasal Mucous of Leprosy Patient: Its Virulence for Laboratory Animals. H. C. De Souza-Araujo.—p. 355.
Comparison of Susceptible and Resistant Rats for Measuring Infectiousness of M. Leprae Murium After In Vitro Experimentation. J. H. Hanks and T. Backerman.—p. 361.

Plasma in Treatment of Lepromatous Leprosy Reaction.—The acute phases that frequently are intercalated in the course of leprosy are referred to as "leprosy reactions." Clinical, histological, and immunologic advances have led to the realization of definite differences between these intercalated reactions, which depend primarily on the defensive powers of the invaded organism. Outbreaks of leprotic erythema multiforme may stimulate the defensive process, contributing to the spontaneous regression of the reactional state; this seems to indicate that the leprosy reactions signify a favorable prognosis. The outbreaks of leprotic erythema nodosum may become manifest with slight fever and minor general disturbances, which develop and regress in a way similar to those of erythema multiforme, but oftener they are accompanied by the symptomatology of the typical lepromatous leprosy reaction, characterized by great exacerbation, in which previous manifestations are reactivated and new ones appear in skin, mucosas, nerves, lymph nodes, and joints, and in which there is predilection for the eyes, testes, liver, lung, and spleen. They are accompanied by fever and other general symptoms. These typical lepromatous leprosy reactions, with which the authors are especially concerned in this paper, have the character of a grave infectious process, and in cases in which they occur repeatedly they may lead to generalized amyloidosis with fatal outcome. Previously employed therapeutic measures having failed in these exacerbations, it occurred to the authors to use blood plasma or other blood fractions,

such as gamma globulin, which is richest in immune bodies. Twenty-two patients with advanced lepromatous leprosy who had frequent typical leprosy reactions were given 85 transfusions of isoplasma (plasma made from calf blood and rendered incapable of producing anaphylaxis). Illustrative case histories indicate that the plasma preparation was administered in doses of from 150 to 300 cc. Twelve of these patients tolerated the heterologous plasma perfectly. Six patients had minor ill-effects, and four patients had serious although short-lived ill effects of allergic nature. All patients treated in this way showed improvement. The best results were seen in patients who had nausea, vomiting and intolerance to various kinds of foods; these disturbances disappeared rapidly. Persistent and repeated epistaxis also ceased quickly. Great improvement was seen in neuritis, manifestations in the skin and mucous membranes, the general condition, and the fever.

Journal of Experimental Medicine, New York

97:1-162 (Jan.) 1953

Studies on Virulence of Tubercle Bacilli: Variations in Virulence Effected by Tween 80 and Thiosemicarbazone. H. Bloch and H. Noll. —p. 1.

Induction of Streptomycin Resistance in Sensitive Hemophilus Influenzae by Extracts Containing Desoxyribonucleic Acid from Resistant Hemophilus Influenzae. H. E. Alexander and G. Leidy.—p. 17.

Experimental Erythroblastosis Fetalis in Rabbits: I. Characterization of Pair of Allelic Blood Group Factors and Their Specific Immune Isoantibodies. A. Kellner and E. F. Hedal.—p. 33.

Id.: II. Passage of Blood Group Antigens and Their Specific Isoantibodies Across the Placenta. A. Kellner and E. F. Hedal.—p. 51.

Tuberculosis Induced by Droplet Nuclei Infection: Initial Homogeneous Response of Small Mammals (Rats, Mice, Guinea Pigs, and Hamsters) to Human and to Bovine Bacilli, and Rate and Pattern of Tubercle Development. H. L. Ratcliffe and V. S. Palladino.—p. 61.

Studies on Entry and Egress of Poliomyelitic Infection: V. Entry After Simple Feeding, with Notes on Viremia. H. K. Faber, R. J. Silverberg and L. Dong.—p. 69.

Protection of Intracellular Brucella Against Therapeutic Agents and Bactericidal Action of Serum. J. M. Shaffer, C. J. Kucera and W. W. Spink.—p. 77.

Intracellular Localization of Poliomyelitis Virus. A. S. Kaplan and J. L. Melnick.—p. 91.

Mechanism Responsible for Hypercholesteremia Induced by Triton WR-1339. M. Friedman and S. O. Byers.—p. 117.

Effect of X-Radiation on Oxygen Uptake of Embryonate Eggs. D. Greiff, H. T. Blumenthal, M. Chiga and H. Pinkerton.—p. 131.

Effect of X-Radiation on Multiplication of Influenza A Virus in Embryonate Eggs. H. T. Blumenthal, D. Greiff, M. Chiga and H. Pinkerton. —p. 135.

Effect of X-Radiation on Multiplication of Rickettsia Mooseri in Embryonate Eggs. D. Greiff, M. Chiga, H. T. Blumenthal and H. Pinkerton. —p. 139.

Structural Changes Produced in Brown-Pearce Carcinoma Cells by Means of Specific Antibody and Complement. B. Kalfayan and J. G. Kidd. —p. 145.

Journal of Investigative Dermatology, Baltimore

19:389-518 (Dec.) 1952

Studies on Chemical Composition of Human Hair Fat: I. Squalene-Cholesterol Relationship in Children and Adults. N. Nicolaides and S. Rothman.—p. 389.

Atabrine in Treatment of Discoid Lupus Erythematosus. J. A. Cramer and G. M. Lewis.—p. 393.

Therapeutic Assays of the Skin and Cancer Unit of the New York University Hospital: Assay VII Quinacrine Hydrochloride (Atabrine Hydrochloride) for Chronic Discoid Lupus Erythematosus. H. H. Sawicky, N. B. Kanof, M. G. Silverberg and others.—p. 397.

Treatment of Chronic Discoid Lupus Erythematosus with Atabrine. G. C. Wells.—p. 405.

Investigative Studies on Colorado Shale Oil. R. Brandt and H. Dexter. —p. 409.

Studies of Skin Reactions to Propylene Glycol. T. G. Warshaw and F. Herrmann.—p. 423.

Examination of Epidermis by Strip Method: II. Biometric Data on Regeneration of Human Epidermis. H. Pinkus.—p. 431.

Electron Microscopy of Normal Human Skin. M. Gray, H. Blank and G. Rake.—p. 449.

Study of Eczematous Sensitivity to Formaldehyde. A. Rostenberg Jr., B. Bairstow and T. W. Luther.—p. 459.

Sodium Para-Aminobenzoate ("Paba") in Treatment of Dermatoses. L. D. Grayson and K. Steiner.—p. 463.

Threshold of Skin Flare in Persons With and Without Malignant Neoplastic Disease. F. B. Benjamin and A. C. Ivy.—p. 467.

Experimental Therapy of Chronic Porphyria with Vitamin B_{12}. C. J. Dillaha and W. Hicklin.—p. 489.

Specific Tissue Alteration in Leprous Skin: II. Histology of Tuberculin Reaction in Leprosy. F. Sagher, E. Kocsard and E. Liban.—p. 499.

J. Neuropathology & Exper. Neurology, Baltimore

12:1-106 (Jan.) 1953

Russian Spring-Summer Encephalitis: (Clinico-Pathologic Report of Case in the Human). G. A. Jervis and G. H. Higgins.—p. 1.

Atrophy of Cerebellum Following Pressure: Study with Silver Carbonate. K. Scharenberg.—p. 11.

*Cerebral Hemorrhage in Hyperergic Angiitis. F. Hiller.—p. 24.

Intracranial Sarcomas. E. Christensen and D. E. Lara.—p. 41.

Effect of Cerebral Microembolism on Perivascular Neuroglia. R. C. Lewis and R. L. Swank.—p. 57.

Neurological Actions Caused by Mutant Gene "Trembler" in House Mouse (Mus Musculus, L.): Investigation. I. M. Braverman.—p. 64.

Intracisternal Injection of Bacitracin in Dogs. P. Teng, F. L. Meleney, D. Cowen and A. Wolf.—p. 73.

Inactivation of Voluntary Motor Function Following Rhizotomy. A. M. Lassek.—p. 83.

Cerebral Hemorrhage in Hyperergic Angiitis.—Two cases, one of endangiitis obliterans in a 52-year-old man, and the other of polyarteritis nodosa in a 46-year-old woman, both with cerebral manifestations are described together because both terminated with an acute, massive cerebral hemorrhage. In spite of the pathological similarities and the basic relationship of endangiitis obliterans and polyarteritis nodosa, their clinical manifestations are different. Both vascular diseases differ in the type of lesions produced as well as in their potential clinical manifestations. Acute inflammatory reactions are seen occasionally in the generally insidious course of thromboangiitis obliterans that are comparable to the acute phases more frequently observed in polyarteritis nodosa. This fact has been clearly demonstrated in a large number of cases studied by Roessle and other workers. The explanation that both diseases represent hyperergic vascular tissue reactions is well founded and may be accepted as a sound basis for the understanding of the pathogenesis of these diseases. Brain hemorrhage can originate, as in the author's male patient, on the basis of an acute migrating phlebitis of the cerebral veins in thromboangiitis, and of an acute or subacute arteritis, possibly with phlebitis, in polyarteritis nodosa. In the chronic stage of this disease massive brain hemorrhage may also occur as hypertensive encephalopathy with the clinical syndrome of a pseudouremia. Hemorrhages due to acute hyperergic angiitis resemble those seen in toxic encephalopathy, although in this syndrome, generally described under the term brain purpura or hemorrhagic pseudoencephalitis, multiple petechial hemorrhages are more frequent than true massive hemorrhages originating from larger blood vessels. It is suggested that the basic difference between hyperergic angiitis and toxic vascular lesions probably lies in the different mode of interaction between vascular tissue and toxic agents. Sensitization of vascular tissue elements to toxic antigenic substances and consecutive hyperergic tissue reactions determine the vascular lesion in hyperergic angiitis. In toxic hemorrhagic encephalopathy on the other hand the sensitization or affinity of the vascular elements appears to be overshadowed by the extreme toxicity of certain agents, as different as a bacterial toxin or a substance like arsphenamine. One may expect a more acute course of the disease and less tissue specificity in the toxic than in the true hyperergic group of manifestations. Quite possibly hyperergic and predominantly toxic damage to blood vessels are often combined in individual cases, and this may help to explain their exceptional features.

Journal of Nutrition, Philadelphia

48:409-566 (Dec.) 1952. **Partial Index**

Methionine and Selenium Toxicity. H. L. Klug, R. D. Harshfield, R. M. Pengra and A. L. Moxon.—p. 409.

Utilization of Calcium from Lactate, Gluconate, Sulfate and Carbonate Salts by Young College Women. M. B. Patton and T. S. Sutton. —p. 443.

Effect of Untreated Corn and Mexican Tortilla Upon Growth of Rats on Niacin-Tryptophan Deficient Diet. R. O. Cravioto, G. H. Massieu, O. Y. Cravioto and F. de M. Figueroa.—p. 453.

Influence of Vitamin B_{12} and Antibiotics on Protein and Energy Utilization in Low Protein Diet. L. K. Knoebel and A. Black.—p. 477.

Chronic Sodium Chloride Toxicity in Albino Rat: I. Growth on Purified Diet Containing Various Levels of Sodium Chloride. G. R. Meneely, R. G. Tucker and W. J. Darby.—p. 489.

Relation Between Vitamin B_{12} Deficiency and Lactation in Rats Fed Purified Casein Rations. L. P. Dryden, A. M. Hartman and C. A. Cary.—p. 509.

Relation of Rate of Growth to Diet: Study of Stock Colony Ration for Albino Rats. R. B. Hubbell and W. A. Krehl.—p. 553.

Journal of Oral Surgery, Chicago

11:1-92 (Jan.) 1953. Partial Index

*Fibrous (Fibro-Osseous) Dysplasia of Jaw Bones. A. Barger and H. L. Jaffe.—p. 3.
Terramycin in Treatment of Cellulitis of Floor of Mouth. S. L. Lane, L. Sarvela, I. Hu and others.—p. 18.
Methantheline Bromide as Premedication for Oral Surgery. A. L. Armer.—p. 22.
Probenecid-Penicillin in Oral Surgery. J. Feinman.—p. 23.
Oral Manifestations of Infection with Virus of Herpes Simplex. J. L. Scales.—p. 34.
Present Concept of Oral Focal Infection. W. E. Wellman.—p. 39.
Method of Immobilizing a Common Type of Maxillary Fracture. T. A. Lesney.—p. 49.
Technic for Creating an Emergency Airway in Cases of Respiratory Obstruction. L. M. Monheim.—p. 57.

Fibrous Dysplasia of Jaw Bones.—The occurrence of fibrous (fibro-osseous) dysplasia of the maxilla or mandible has been studied in 12 patient, 5 of whom, being representative, are described in detail. In one of these five patients, a 21-year-old man, the neighboring cranial bones were also affected. The other four were female patients between the ages of 12 and 46, the disease being commoner in females than in males. The manifestations of fibrous dysplasia in jaw bones are, on the whole, the same as those in the skeleton in general. Fibrodysplastic lesions are more likely to be found heavily ossified in jaw bones, however, than in other skeletal parts. Fibrous dysplasia of jaw bones corresponds to the lesion that previously has been and still often is denoted by such terms as "fibrous osteoma," "ossifying fibroma," and "osteofibroma" of jaw bones. Since long-bone lesions (even solitary ones) whose pathological aspect is identical with that of the jaw bone lesions that have been described by these terms are now classified as fibrous dysplasia of bone, it seems appropriate to classify the jaw bone lesions likewise. The fibrodysplastic lesions of jaw bones are benign, and usually do not grow much after they have been demonstrated clinically. Radical surgical resections are contraindicated for them. Surgical treatment should be employed only for cosmetic purposes or to form a smooth base for a prosthesis or to correct a disturbance of temporomandibular function.

Kansas Medical Society Journal, Topeka

54:1-40 (Jan.) 1953

Management of Terminal Patients with Inoperable Carcinoma. J. S. LaDue.—p. 1.
Treatment of Thyroid Carcinoma with Radioactive Iodine. G. A. Andrews.—p. 7.
Repeated Infections of Gonorrhea. R. Boese.—p. 10.

Medical Annals of District of Columbia, Washington

22:1-44 (Jan.) 1953

Science in Medicine and Related Fields. V. Bush.—p. 1.
Critical Evaluation of Anticoagulant Therapy in Treatment of Acute Myocardial Infarction. H. I. Russek.—p. 7.
Diagnostic Technics with Radioiodine. S. C. Werner.—p. 12.
Vaginitis. R. Bieren.—p. 17.

Michigan State Medical Society Journal, Lansing

52:1-112 (Jan.) 1953

Importance of History and Physical Examination in Diagnosis of Heart Disease. S. A. Levine.—p. 35.
Treatment of Nephrotic Syndrome. L. T. Iseri, I. J. Mader and D. E. Chandler.—p. 41.
Surgical Treatment of Mitral Stenosis. C. R. Lam.—p. 48.
Current Treatment of Rheumatic Fever. M. S. Hecht, A. Nolke and W. E. Shelden.—p. 51.
Studies with Flicker Photometer. D, C. Overy.—p. 55.
Metastatic Sarcoma of Heart Diagnosed Antemortem. T. N. James.—p. 57.
Simplified Technique for Wiring Aneurysms. S. H. Orr and P. Jordan Jr.—p. 61.
Hereditary Capillary Fragility. R. W. Monto, D. W. Bales and M. J. Brennan.—p. 62.
Myocardial Infarction: Comparison of Results Following Use of Dicumarol and Dicumarol with Heparin in the Acute Stage. R. J. Bolt.—p. 65.
Re-Enforcement of Vascular Grafts with Intestinal Musculature. J. M. Hammer, P. H. Seay and E. J. Hill.—p. 69.
Cat-Scratch Disease. E. L. Quinn.—p. 71.

Military Surgeon, Washington, D. C.

112:1-78 (Jan.) 1953. Partial Index

What is Military Medicine? L. Pugh.—p. 8.
Military Significance of Amebiasis. R. A. Radke.—p. 18.
Results with Simplified and Standardized Tuberculin Test Technique. S. W. Simon and L. Rinard.—p. 37.
An Endemic Site of Filarial Elephantiasis in Nicaragua. A. H. Lawton and A. B. Wight.—p. 40.

Minnesota Medicine, St. Paul

36:1-96 (Jan.) 1953

Medical School in Relation to Medical Practice in the State. C. G. Sheppard.—p. 23.
Changing Treatment of Pulmonary Tuberculosis. T. J. Kinsella.—p. 29.
Present Status of Tuberculosis in Minnesota: Beginning of Tuberculosis Control: Preliminary Report. F. F. Callahan.—p. 33.
Treatment of Anemia. F. J. Heck.—p. 40.
Common Ocular Manifestations of Diabetes Mellitus. J. H. Peterson.—p. 45.
Urgent Surgical Conditions in the Newborn. A. B. Hayles.—p. 49.
Dermatitis from Industrial Oils and Chromates. R. F. Kendall.—p. 55.
Coronary Insufficiency. B. J. Mears.—p. 57.
Disturbances of the Thyroid Other than Hyperthyroidism. M. A. Nordland and M. Nordland.—p. 60.

Missouri Medicine, St. Louis

50:1-80 (Jan.) 1953

Congenital Deformities of Hands and Feet. F. X. Paletta.—p. 19.
*Cortisone in Treatment of Strictures of Human Male Urethra. J. E. Byrne.—p. 23.
*Culpability of the Homosexual. N. J. Blackman.—p. 27.
Increased Incidence and Death Rate in Diphtheria and Pertussis. T. L. Dwyer.—p. 30.
Digilanid as Compared to Powdered Leaf of Digitalis in Congestive Cardiac Failure. J. B. Wolffe and A. D. Dale.—p. 32.
Recent Advances in Thyroid Physiology and Treatment. J. Lerman.—p. 35.
Esophageal Leiomyomas: Surgical Treatment: Review and Case Report. H. H. Shoulders Jr.—p. 49.
Ulcers: Three Times Perforated. R. W. Smith and P. T. Berry.—p. 51.

Cortisone in Strictures of Male Urethra.—Assuming that any substance that will inhibit fibrous tissue proliferation might be of value in urethral stricture, Byrne decided to augment the dilation of urethral strictures with the administration of cortisone. Thirty-one patients from the urologic services of two St. Louis hospitals were selected for this study. All had undergone conventional treatment for urethral stricture, and had symptoms referable to their stricture when they were hospitalized. Routine laboratory examinations including urethral cultures were made, and injections of 400,000 units of procaine penicillin were given on the day of admission and for the next two days. On the day following admission the patients were anesthetized, and the urethra was dilated with instruments until an F-20 Kollman dilator (male curve) could be inserted. The dilator was then replaced by an F-24 Foley type catheter. Cortisone therapy was instituted on the day of admission, with an initial dose of 300 mg. being given in the first 24 hours. The dose was then reduced to 100 mg. daily in four divided doses for the next 30 days. Following the removal of the catheter on the third day, the patients were discharged to the outpatient department, where they were seen at weekly intervals. Nine months after the initiation of this treatment, 17 of the patients showed good results. They will be examined again after 12 and 18 months. Patients in the original series for whom the treatment failed are being given somewhat larger doses of cortisone over a longer period of time.

Nature of Homosexuality.—Blackman regards homosexuality as a part of a personality disorder in which loneliness, fear, inferiority attitudes, the nonacceptance of reality, and unwillingness to assume adult roles of responsibility play an important role. As a symptom of a personality instability, it may be found in individuals with different personality disorders. To discern "culpability" without understanding what the symptom of homosexuality stands for has led to legislation that is often difficult and impractical in application. The study of 50 homosexuals referred for observation did not single out any preponderance of offenses in any one psychiatric group, except for the greater number of criminal offenses (other than sexual) among psychopathic and more suicidal attempts among neurotic or "normal" homosexual individuals. Homosexual persons need treatment,

understanding, and humane and adult handling, not merely punitive, repressive measures. They represent a cross section of persons with various personality defects, not free of guilt, nor engrossed in hedonistic exploits. They are often anxiety ridden, full of inferiorities and hurts. showing a masochistic need to create hostility so as to salve some of the self-punitive attitudes within them.

Neurology, Minneapolis

3:1-76 (Jan.) 1953

Ependymoma of Brain: Pathologic Aspects. H. J. Svien, R. F. Mabon, J. W. Kernohan and W. M. Craig.—p. 1.
Tussive Syncope and Its Relation to Epilepsy. D. S. O'Doherty.—p. 16.
Ultracentrifuge Studies of Lipoproteins in Multiple Sclerosis. R. B. Aird, J. W. Gofman, H. B. Jones and others.—p. 22.
Perception of Simultaneous Tactile Stimuli in Normal Children. M. Fink and M. B. Bender.—p. 27.
Clinical, Histologic and Electrical Studies in Muscular Dystrophies. A. J. Arieff and W. R. Kirschbaum.—p. 35.
Bilateral Anterior Cingulate Gyrus Lesions: Syndrome of Anterior Cingulate Gyri. R. W. Barris and H. R. Schuman.—p. 44.
Potency of Isolated Brachial Dorsal Roots in Controlling Muscular Physiology. A. M. Lassek.—p. 53.
Barbiturate Intoxication. F. Y. Tichy.—p. 58.

New England Journal of Medicine, Boston

248:1-42 (Jan. 1) 1953

Children are Not Expendable. J. J. Connelly.—p. 1.
*Asymptomatic Isolated Valvulvar Pulmonary Stenosis: Diagnosis by Clinical Methods. S. G. Blount Jr., S. Komesu and M. C. McCord.—p. 5.
Coma in Infectious Mononucleosis. R. B. Kalmansohn, N. F. Conte and R. J. Cavalieri.—p. 12.
Brain Abscess: Influence of Antibiotics on Therapy and Mortality. H. T. Ballantine Jr. and J. C. White.—p. 14.
Psychosurgery. M. Greenblatt and H. C. Solomon.—p. 19.
Cross-Sensitivity to Diphenylhydantoin Sodium and to Phenobarbital: Report of Two Cases. G. E. Morris and J. D. Cohen.—p. 27.

Asymptomatic Pulmonary Stenosis.—The occurrence of asymptomatic isolated valvular pulmonary stenosis in three boys and three girls between the ages of 5 and 14 years is reported. A correct diagnosis was established in all six patients by strictly clinical methods. Isolated pulmonary stenosis is not a rare congenital cardiac anomaly but one of the commoner types. As a result of their observations, the authors stress that this entity exists in an apparently mild form, the patient appearing normal in all respects. Physical examination revealed a systolic thrill in five patients and a harsh systolic murmur in all six patients. This murmur was of maximum intensity in the first or second left intercostal space, and it was almost always louder in the first than in the third left intercostal space. The second heart sound in the first and second left intercostal spaces was decreased in intensity or absent in four patients, of normal intensity in two, but pure in quality in all. The electrocardiogram was interpreted as normal in four patients and showed evidence of hypertrophy of the right ventricle of varying degree in two. Fluoroscopic examination proved to be of great importance in indicating the correct diagnosis. Poststenotic dilatation was present in all patients, and in all there was disproportion between the amplitude of the pulsation over the main pulmonary artery segment and the right and left pulmonary arteries. The over-all vascularity of the lung fields may be within normal limits, although it is frequently slightly decreased toward the periphery. The size of the heart was within normal limits in five patients and increased in only one patient. Its configuration suggested hypertrophy of the right ventricle in two patients. There was prominence in the area of the right auricle in three patients. Enlargement of the right auricle with a normal-sized heart in a patient without symptoms is considered to be a significant finding and to suggest the diagnosis of isolated pulmonary stenosis. Cardiac catheterization was performed in all six patients and confirmed the clinical diagnosis; it is of greatest importance in determining the management of the patient. Although isolated valvular pulmonary stenosis can masquerade as a mild and benign condition as it did in the authors' cases, the asymptomatic patient has a malignant process that, unless recognized early and corrected surgically, may be fatal.

New Jersey Medical Society Journal, Trenton

50:1-40 (Jan.) 1953

Treatment of Chronic Pharyngeal Infection and Postnasal Drip in Children. A. Dintenfass.—p. 5.
Isoniazid in Treatment of Tuberculosis: Preliminary Report. A. M. Sabety, R. A. Greco, R. A. Ford and G. K. Hawkins.—p. 11.
Premature Baldness: Preliminary Report on Treatment with Topically Applied Estrogen Lotion. I. Shapiro.—p. 17.
Public Health Aspects of Cytology in Cancer Detection. H. B. Miller, C. R. Moog and F. P. Lee.—p. 20.
Reticulocytosis Following ACTH in Sickle Cell Anemia. G. P. Bisgeier.—p. 24.
Speech Handicapped Children. E. P. Duffy Jr.—p. 26.

New York State Journal of Medicine, New York

53:1-112 (Jan. 1) 1953

Recurrent Headache in Children: Study of 100 Clinic Cases. G. R. Krupp and A. P. Friedman.—p. 43.
Health Service to School Children in New York City. R. W. Culbert and H. Jacobziner.—p. 47.
Role and Function of Private Physician in School Health Service Program. H. Jacobziner and R. W. Culbert.—p. 51.
Studies in Serum Electrolytes: XX. Renal Insufficiency with Uremia. F. W. Sunderman.—p. 57.
Oral Tumors. C. G. Darlington.—p. 61
Nicotinic Alcohol (Roniacol) in Peripheral Vascular Diseases and Allied Conditions: Its Use and Limitations. M. M. Fisher and H. E. Tebrock.—p. 65.
*Cortisone Therapy of Penicillin Reactions. J. Davis.—p. 69.
Arrhythmias Produced by Intravenous Procaine Amide. L. J. Acierno, R. Gubner and B. Poliakoff.—p. 72.

Cortisone Therapy in Penicillin Reactions.—According to Davis, allergic and toxic reactions from penicillin therapy have an over-all incidence of 8 to 10%. Although circulating antibodies have not been consistently demonstrated in human subjects, there seems ample experimental evidence to support the allergic concept of many cutaneous manifestations resulting from penicillin. In some instances penicillin reactions are unresponsive to routine methods of treatment, usually consisting of the administration of antihistamines, epinephrine, calcium, and topical remedies. In cutaneous penicillin reactions that had failed to respond to routine therapy, an exceedingly small dose of cortisone was found to produce an excellent effect. Three cases required only one injection of 50 mg. of cortisone for complete remission of the reaction. In two cases this dose was repeated in 24 hours. No patient received more than a total of 100 mg. of cortisone. There was no recurrence of the clinical or symptomatic manifestations in any of the patients treated.

Pediatrics, Springfield, Ill.

10:637-754 (Dec.) 1952

*Importance of Early Surgical Treatment of Craniosynostosis: Review of 36 Cases Treated During First Six Months of Life. R. L. McLaurin and D. D. Matson.—p. 637.
Amino Acid Metabolism in Patients with Acute Leukemia. H. A. Waisman, R. A. Pastel and H. G. Poncher.—p. 653.
Oxalosis: Possible "Inborn Error of Metabolism" with Nephrolithiasis and Nephrocalcinosis Due to Calcium Oxalate as Predominating Features. L. Ying Chou and W. L. Donohue.—p. 660.
Use of I^{131}-Labeled Protein in Study of Protein Digestion and Absorption in Children With and Without Cystic Fibrosis of Pancreas. P. S. Lavik, L. W. Matthews, G. W. Buckaloo and others.—p. 667.
Ferrous Sulfate Poisoning: Report of Fatal Case. L. K. Branch.—p. 677.
Giant Cell Pneumonia with Inclusions. R. W. Weller.—p. 681.
*Anomalies Occurring in Children Exposed In Utero to Atomic Bomb in Hiroshima. G. Plummer.—p. 687.
Alterations in Blood Chemistry Caused by Diarrhea During Infancy as Determined by Direct Analysis of Plasma and Erythrocytes. J. N. Ettel-dorf, F. S. Hill, A. H. Tuttle and others.—p. 694.

Early Surgical Treatment of Craniosynostosis.—In this paper the authors stress the importance of early surgical treatment of craniosynostosis and report on their experience with 36 children who were operated on during the first six months of life. The operation of choice was linear craniectomy parallel to the suture which was prematurely fused with routine insertion of polyethylene film over the bone margins to delay closure. Among 19 children with premature fusion of the sagittal suture all except two had a preoperative cephalic index of less than 70, which indicated anteroposterior elongation. The operation brought about a substantial rise in the index in all but one pa-

tient. Of five of these patients who were operated on before the routine placement of polyethylene film over the bone margins was introduced, three needed repeated craniectomies because the regeneration of bone closed the artificial sutures within 12 to 15 months. In the follow-up all of these patients had developed normally, and there were no instances of mental retardation or visual impairment. Ten children had premature closure of the coronal suture (five unilateral and five bilateral), and in four of them the squamosal suture had also been fused. In this group of children early surgery is especially indicated to prevent restriction of brain growth, secondary intracranial hypertension, and visual loss, and also to obtain the cosmetic improvement that follows the operation. In them roentgenography is the best means to evaluate the skull contour changes after the operation; the cephalic index is not reliable, probably because in these children the height of the cranium ("towering") tends to increase to compensate for the diminished anteroposterior expansion. Although the follow-up is too short for a definitive evaluation, there was no visual impairment or optic nerve pallor in any of these children. Two children with bilateral coronal fusion who were thought to be mentally retarded before the operation are now progressing, although they are still below average. The others are mentally normal. One of these patients treated before the use of polyethylene film needed another operation two years later, and another one year later despite the use of it; but in the others the space left by the craniectomies remained functionally open for a sufficient period of time. One of three patients with combined coronal and sagittal synostosis had unilateral coronal fusion and the other two bilateral coronal fusion. Multiple stage operations brought about pronounced improvement in appearance and fairly normal mental development. Generally these results are not achieved in older children. The youngest patient in this group was 1½ weeks old. Two children had combined coronal and lambdoid fusion and one of these had papilledema at 2 months of age. One patient had bilateral coronal fusion but persistence of the metopic suture and another had premature fusion of the metopic suture only. Results were good in all these children, and complications were few. Several important technical problems in craniectomy (transfusion, head dressing, and prevention of infection) are emphasized.

Children Exposed in Utero to Atom Bomb Blast on Hiroshima.—A study was made of 205 children 4½ years old born to mothers who in their first 20 weeks of pregnancy had been exposed to the atomic bomb blast on Hiroshima on Aug. 6, 1945. It was found that persons within 1,400 m. from the hypocenter have the greatest probability of sustaining severe radiation injuries, especially epilation and purpura, and the only shielding that apparently protects the fetus from direct irradiation is cement. Only 11 (5%) of these mothers were within 1,200 m. from the hypocenter of the explosion and the head circumference measurements in the 11 children of these women gave the most revealing data. The mean head circumference for 4 to 5-year-old Japanese children, according to 1951 reports, is 50.2 ± 1.64 cm. for boys and 49.3 ± 1.69 cm. for girls. Only 2 of the 11 children fell within 1 standard deviation and 1 within minus 3 standard deviations of these means. In the others the size of the head was below the mean circumference of Japanese children 1 year of age. All the mothers of the children with head circumferences less than 45 cm. had been exposed to the explosion from within 1,200 m. of the hypocenter. Microcephaly was associated with mental retardation in seven of these children. There was no microcephaly among the 194 children whose mothers had been exposed at distances greater than 1,200 m. Mongolism was found in two children. One, whose mother was exposed at a distance beyond 2,500 m. had a normal size head; the other, whose mother had been exposed within a distance of 1,200 m., had microcephaly. Thus, since the incidence of other anomalies in these children was similar to that found in other populations in Japan, microcephaly was the commonest anomaly with a demonstrable correlation to the distance of the mother from the hypocenter. The role of individual resistance to radiation could not be determined. The relationship of the period of gestation to susceptibility of the developing human central nervous system was not clearly defined, although there was no defect in the child of one mother from a heavily irradiated group who was at the time of the explosion in her sixth week of pregnancy. Although no conclusion can be drawn from this one case, it suggests that the human nervous system may be resistant to radioactive material in its early stages of development.

Psychosomatic Medicine, New York

14:431-524 (Nov.-Dec.) 1952. **Partial Index**

Is Natural Childbirth Natural? A. J. Mandy, T. E. Mandy, R. Farkas and E. Scher.—p. 431.
Training for Childbirth: Remembrance of Labor. L. Z. Freedman, F. C. Redlich, L. D. Eron and E. B. Jackson.—p. 439.
Psychosomatic Survey of Cancer of the Breast. C. L. Bacon, R. Renneker and M. Cutler.—p. 453.
Anxiety Patterns in Angina Pectoris. J. A. Arlow.—p. 461.
Effect of Epinephrine on Adrenocortical Activity of Psychotic Patients. H. Werbin, S. M. Seidlin, L. Cohen and J. S. A. Miller.—p. 469.
Variations in Respiration and in Respiratory Symptoms During Changes in Emotion. I. Stevenson and H. S. Ripley.—p. 476.

Public Health Reports, Washington, D. C.

68:1-140 (Jan.) 1953. **Partial Index**

*Employment of the Older Worker. T. G. Klumpp.—p. 20.
Abatement of Stream Pollution Caused by Industrial Wastes. R. Eliassen.—p. 43.
Objective Approach to Drug Therapy. J. S. Mordell and C. K. Himmelsbach.—p. 47.
*Radiation Exposure in the United States. D. W. Moeller, J. G. Terrill Jr. and S. C. Ingraham II.—p. 57.

Employment of the Older Worker.—Klumpp feels that society has been quite illogical and inconsistent in its attitude toward the older worker. On the one hand we have not objected to electing or appointing older persons to positions of greatest responsibility, whereas on the other hand we maintain unselective compulsory retirement rules for the rank and file of workers. From an economic point of view, it would be sound policy to permit older persons to work as long as they are productive and desire to work. Since a country's national wealth, purchasing power, and standard of living depend on productivity, our economic situation is strongest when we have the largest number of active producer-consumers. The unemployed contribute nothing to the economy and place a burden on active workers who must support them, either by direct contribution or by taxes, along with their own families. The increasingly greater percentages of persons in the higher age groups and other factors will make it necessary to reconsider compulsory retirement at certain ages. Methods must be devised of determining which persons are capable of working at 65 or 70 years of age. A man is not fit one day and unfit the next because a page of the calendar has turned. In any circumstances, a social rule that eliminates the fit with the unfit, which destroys the good with the bad, or which punishes the innocent with the wicked, is not a good rule. Efforts should be directed toward accomplishing selective retirement based on individual capacity rather than age.

Radiation Exposure.—Moeller and associates cite figures on the use of x-rays in medical and dental services, in industry, in commerce, and in research. They also comment on the irradiation hazards involved in the handling of radium and radioactive isotopes, in the exposure to radioactive sources in static eliminators, and in the operation of nuclear reactors. Although many instances of excessive exposure of x-ray personnel are reported, few specific data are available regarding average exposure for these workers. A review of the literature reveals that the average annual radiation exposure from medical diagnostic procedures is about 2 r per person. From the data presented, it is not possible to reach definitive conclusions as to the magnitude of the health problem presented by the several sources of ionizing radiation. This review indicates that large numbers of the population are currently exposed to radiation approaching doses recommended as the maximum permissible for radiation workers. The sources of these exposures vary from community to community. Efforts are being made by military and civilian agencies to expand the production and use of radioactive materials. It is expected that the near future will bring nuclear reactors for power

production, research, and transportation into widespread use. Many radiological health workers believe that, as this technological development occurs, protection from radiation must become a major concern of public health programs.

Review of Gastroenterology, New York

20:1-80 (Jan.) 1953

Cytologic Method in Gastrointestinal Cancer. E. L. Hecht and C. Cohen.—p. 11.
Diagnosis and Treatment of Intractable Peptic Ulcer. J. Shaiken.—p. 21.
Sigmoid Volvulus. R. H. Delafield, K. Hellriegel, A. Meza and O. Urteaga.—p. 29.
Electrogastrograph—Some Clinical Applications. H. S. Morton and W. S. Martin.—p. 37.
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Gastrophonia. D. Diamond and B. M. Bernstein.—p. 61.

Surgery, St. Louis

33:1-160 (Jan.) 1953

*Evaluation of Billroth I Operation for Peptic Ulcer. S. Wallensten and L. Gothman.—p. 1.
*Limitations in Clinical Use of Banthine in Peptic Ulcer: Protective Action of Banthine Against Histamine-Provoked Ulcer in Dogs. R. R. Rauch and R. N. Bieter.—p. 21.
Some Aspects of "Senile" Gangrene. E. P. Lehman and C. W. Figueira.—p. 28.
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Closure of Atrial Septal Defects with Aid of Hypothermia; Experimental Accomplishments and Report of One Successful Case. F. J. Lewis and M. Taufic.—p. 52.
Obturation of Duodenum as Aid in Cholangiography. M. C. Miller, W. S. Blakemore and R. L. Tondreau.—p. 60.
Effect of N-Allylnormorphine on Gastrointestinal Motility. J. M. Beal and H. Schapiro.—p. 65.
Surgical Significance of Subareolar Lymph Plexus in Cancer of the Breast. R. N. Grant, E. J. Tabah and F. E. Adair.—p. 71.
Relationship of Bleeding and Clotting Times to Massive Transfusions of Citrated Blood. A. Mayer.—p. 79.
Influence of Parenteral Aureomycin, Chloromycetin, Terramycin, and Procaine Penicillin on Mortality of Experimental Peritonitis. E. A. Barbieri, C. D. Cottrell Jr., E. B. Coley and others.—p. 83.
Surgical Aspects of Blastomycosis. J. R. Levitas and G. L. Baum.—p. 93.
Fluorescein Test for Intraperitoneal Rupture of Urinary Bladder: Experimental Study. A. F. Cipolla, L. G. Khedroo and P. A. Casella.—p. 102.
Satisfactory Operating Table for Use in Experimental Surgery. E. W. Hoag and K. A. Merendino.—p. 107.

The Billroth 1 Operation for Peptic Ulcer.—This is an analysis of the results obtained in 364 patients with peptic ulcer (103 gastric and 261 duodenal), who were subjected to the Billroth 1 operation at two hospitals in Sweden during the years between 1932 and 1949. The surgical technique was that of Bohmansson, which from the anatomic and functional viewpoints is superior to the Billroth 2 operation and in addition makes possible a resection which is equal in extent. The operative mortality rate for the entire series was 2.2%; it was 1.2% in the 261 patients with duodenal ulcer and 4.9% in the 103 patients with gastric ulcer. The ulcer recurred in one of 91 patients with gastric and in 9 of 239 patients with duodenal ulcer. The dumping syndrome occurred in 10.1% of the patients, but it was never severe enough to cause invalidism. The nutritional status was good; only 14% of the patients failed to regain their normal weight. The authors feel that the Billroth 1 operation is the method of choice for gastric ulcer and is equal to the Billroth 2 operation in duodenal ulcer. The nutritional state of the patients in this series was better than that of patients in an earlier series in which the Billroth 2 operation was used. The late results of partial gastrectomy for peptic ulcer support the earlier impression that the amount of stomach resected is of greater importance than the technique employed. The good initial results in this series are ascribed to the improved operative technique, the pre and postoperative electrolyte fluid and protein control, modern anesthesia, and chemotherapy.

Limitations in Clinical Use of Methantheline in Peptic Ulcer.—Fifty-two patients were followed while under treatment with methantheline (banthine®) for peptic ulcer. At the onset of treatment, each patient had symptoms of ulcer activity. There were 46 patients with duodenal ulcers, 3 with gastric ulcers, 2 with jejunal ulcers, and 1 with gastric pouch ulcer after subtotal gastric resection. In 23 patients the treatment with methantheline was successful, 5 patients received some benefit, which, however, was inadequate without additional ulcer therapy, and in 24 patients methantheline therapy failed. The median duration of methantheline therapy in the successful cases was 17 months. In most instances of failure, treatment had been continued for less than five months, patients either requesting discontinuance of the medication or being considered failures after adequate trial. Of the 24 failures, 15 received too little benefit to justify continued use of methantheline, in 5 the treatment was discontinued because of adverse side-reactions, and 4 patients developed serious ulcer complications. The ultimate failure of the medication could usually be predicted following a trial of a few weeks. The most effective dosage schedule of methantheline therapy was 100 mg. four times daily (before meals and on retiring). Adverse side-reactions occurred in two-thirds of the patients, with excessive dryness of mouth in 28, slowness of urination in 10, heartburn in 7, blurred vision in 4, constipation in 3, conjunctivitis secondary to decreased lacrimation in 2, and loss of libido in 2 cases. Severe gastrointestinal hemorrhage or obstruction occurred in four patients while they were receiving maintenance dosages. Laboratory studies on the protective action of methantheline against histamine-provoked ulcer were carried out in 28 mongrel dogs. Three of the dogs developed duodenal or gastric ulcerations. Of the remaining 25 dogs, 12 survived the 45 day period of injections of histamine in beeswax and methantheline in beeswax and were found, at necropsy, to have entirely normal gastrointestinal tracts. Thirteen animals died from distemper before completion of the 45 day injection period and were also free from evidence of peptic ulceration. The authors feel that the greater efficacy of methantheline in animals may be due to the slower and more complete absorption of methantheline when given parenterally in animals as compared to the more rapid and more erratic absorption when taken orally by man.

U. S. Armed Forces Med. J., Washington, D. C.

3:1751-1904 (Dec.) 1952. **Partial Index**

Acute Renal Insufficiency. P. D. Doolan.—p. 1751.
Effect of Antibiotics in Abacterial Pneumonia. L. Homer, W. N. Donovan and R. A. Radke.—p. 1767.
*Smallpox: 21 Cases in United Nations Personnel, Korea. S. E. Silvertson and J. B. Hyman.—p. 1777.
Site for Intramuscular Injection. R. W. Augustine, W. E. Landmesser Jr., M. V. Parker and O. L. Vaden.—p. 1787.
Fusospirochetal Stomatitis: Treatment with Aureomycin and Terramycin. E. T. Borish.—p. 1791.
Leadership and the Incidence of Trench Foot. E. R. Inwood.—p. 1795.
Technic of Intra-Arterial Transfusion. S. F. Seeley, R. M. Nelson and S. A. Wesolowski.—p. 1801.
Stab Wound of Cerebrum. C. R. Reiners and W. E. Philip.—p. 1809.
Relation of Hypertension to Arterial Aneurysms of the Brain. B. K. Black and S. P. Hicks.—p. 1813.
Suicidal Gestures in Occupation Personnel on Okinawa. L. G. Laufer and D. H. Casriel.—p. 1825.
Technic of Discography. P. G. Gleason.—p. 1831.
*The Rib as Secondary Missile. W. J. Gillesby.—p. 1839.
Sickle Cell Trait and Frostbite. M. J. Ellenhorn and D. Weiner.—p. 1845.
Meralgia Paresthetica. W. J. Friedlander.—p. 1857.
Bigeminy Due to Autonomic Nervous System Imbalance. S. L. Alterman.—p. 1862.
Traumatic Aneurysm of the Innominate Artery. E. H. Dickinson, R. M. Hood and F. C. Spencer.—p. 1871.
Carcinoma of the Liver with Bone Metastases Resembling Multiple Myeloma. J. C. Bates.—p. 1881.
Complications of Mumps. H. D. Riley Jr.—p. 1887.

Smallpox in Korea.—Twenty-one patients with smallpox were seen at a station hospital in Korea. Eighteen of the patients were between 18 and 25 years of age. All were men except one, a 4½-month-old girl. Thirteen were Americans. The patients were divided into four groups: (1) those with confluent lesions; (2) those with discrete lesions, in whom the last crust was lost during the third or fourth week of illness; (3) those whose illness lasted only 10 days and whose rash was easily confused with chickenpox (varioloid smallpox or alastrim); and (4) those with hemorrhagic smallpox. The confluent type of smallpox was seen in 11 patients. Eight of these did not have a smallpox vac-

cination scar, and they stated that "vaccinations never worked" on them. The other three were Turks, admitted late in the course of the disease when confluent pox prevented visualization of scars and language barriers made immunization histories unobtainable. Three of the seven patients with discrete smallpox had childhood vaccination scars, and subsequent vaccinations had never been successful. The other four did not have scars and, although they had been vaccinated at least twice in the preceding eight months, none were successful. In both of the patients with varioloid smallpox, vaccinations had been unsuccessful since the childhood "take." Although the virus was not cultured from the one patient with hemorrhagic smallpox, the demonstration of Guarnieri's bodies in the skin confirmed the diagnosis. The authors conclude that smallpox attacks those who have never had a successful vaccination or who have not had a take since the primary vaccination reaction in childhood. Attention is called to the difficulty in differentiation between a true immune reaction and a foreign protein reaction. The hematological changes are of diagnostic and prognostic value. The presence of early lymphadenopathy, particularly axillary, lends further weight to the diagnosis of smallpox. Extensive oral, pharyngeal, and laryngeal mucosal lesions were ominous prognostic signs. The patients who were unable to eat or drink because of them died despite intravenous and subcutaneous administration of fluids. A patient was considered noninfectious when the last crust disappeared. The soles of the feet were last to clear.

The Rib as a Secondary Missile.—Any missile striking a rib produces damage much greater than would ordinarily be expected because the velocity of the missile is partially transmitted to the fractured rib and the rib becomes a secondary missile. The author describes the case of a man who was struck by a rifle bullet in the left lower lateral aspect of his chest. The wound of entrance was at the posterior axillary line and the wound of exit was at the midaxillary line. The bullet fractured the 10th rib and the rib then became a secondary missile, springing into the chest and cutting the lung, diaphragm, and spleen to a depth of about 4 in. (10 cm.) from the normal position of the rib. The mechanism of a high-speed missile striking a rib is similar to that which exists in billiards. The missile is deflected, and the rib fragments carom off, depending on the angles involved. Rib fragments may be found a great distance from the path of the missile as a result of the carom effect. Thoracotomy is more likely to be necessary if the rib is damaged by a missile entering than by one leaving the chest.

Western J. Surg., Obst. & Gynecology, Portland, Ore.

61:1-52 (Jan.) 1953

Uretero-Intestinal Anastomosis: New Technic. J. R. Hand.—p. 1.
*Longevity and Cancer. C. F. Dixon and C. A. Pitchford Jr.—p. 18.
Relaxation of Symphysis Pubis in Monkeys. J. C. Gold and F. E. Emery.—p. 24.
*Anal Colostomy in Excision of Rectum and Rectosigmoid. G. F. Norman and A. May.—p. 27.
Routine Use of Episiotomy with Description of Continuous Knotless Repair. D. A. Dallas.—p. 29.
Bunion Treatment by Greenstick Osteotomy, Metatarsal Base. J. H. Varney, J. K. Cocker and J. J. Cawley.—p. 36.
"Spekk-Finger," Severe Finger Infection Observed in Arctic Sealers. K. Rodahl.—p. 39.

Longevity and Cancer.—Brief reports on 32 patients between the ages of 10 and 70 years with carcinoma are presented to illustrate the long periods of survival that not infrequently follow adequate radical treatment of carcinoma. The 18 patients with carcinoma of the colon survived for from 13 to 42 years after the original resection, and the 5 with carcinoma of the stomach for from 19 to 28 years. The two patients with carcinoma of the mouth survived for 29 and 16 years respectively; the patient with carcinoma of the breast, for 26 years; the one with carcinoma of the kidney for 14 years, and the 5 with multiple carcinomas for 13 to 41 years. Statistical studies at the Mayo Clinic on patients who had had carcinoma of the colon, breast, or stomach and who had submitted to radical surgical management suggest that after the initial survival period of five to seven years, the survival rates reach a plateau parallel to the survival of the general population; this adds significance to five year survival. Generally speaking, five year survival indicates a reasonable chance of cure of most types of carcinoma.

Anal Colostomy.—Norman and May describe a technique of anal colostomy that was used on six patients after excision of the rectum or rectosigmoid for cancer of these areas. The method depends on preservation of a small cuff of the lower rectum above the sphincter mechanism, in accordance with the concept that the nervous and reflex centers of control and evacuation are located here. The rectum is removed as thoroughly as in the older procedures, as well as the upward lymphatic extension. A clamp is passed through the previously dilated anus grasping either the sutures closing the distal sigmoid or the bowel itself, drawing it through the anus. The bowel is held in position by the cuff of the rectum, with 3 to 6 in. (7.5 to 15 cm.) of the bowel protruding outside of the anus. A clamp is applied distally to prevent retraction. An empty Penrose drain is inserted outside the sigmoid from the pelvic cavity. The pelvis is lightly peritonealized to prevent pocketing and adhesions before closure of the abdomen. The drain is removed in about 48 hours when the exterior sigmoid is uniformly black. This portion has sloughed off spontaneously in all the patients. The operation is entirely abdominal. No perineal or sacral incisions are employed. There is no anastomosis to leak. There is no pull-through of carcinoma tissue or lymphatics after mobilization. Adequate drainage of the pelvis is afforded, and evacuation of gas postoperatively is a simple matter. Of the six patients, four had excellent control, one poor, and another mediocre. Complications have been minimal due to absence of anastomosis line and adequate drainage. The method is recommended when the lower margin of the growth is at least three in. (7.5 cm.) above the sphincters, and also in debilitated patients. It is relatively easy to perform and is tolerated better than other procedures by the patient.

Yale Journal of Biology and Medicine, New Haven

25:83-158 (Nov.) 1952. Partial Index

Proposed Mechanism of Extracellular Regulation of Muscle Composition. R. E. Cooke and W. E. Segar.—p. 83.
*Rapid Micro Method for Turbidimetric Determination of Serum Protein. I. A. Parfentjev and M.-L. Johnson.—p. 94.
Circulatory Changes in Pulmonary Arterio-Venous Fistula. F. D. Gray Jr., P. R. Lurie and R. Whittemore.—p. 107.
Prerequisites of Good Teaching. E. Sachs.—p. 115.
Partial Purification of Lethal Toxin of Clostridium Histolyticum. H. E. Bowen.—p. 124.

Rapid Micromethod for Determination of Serum Protein.—Since most of the current methods of analysis of serum proteins are either too complicated for routine use or yield unreliable data, Parfentjev and Johnson devised a rapid micromethod, which is based on a photoelectric measurement of the dispersed precipitate produced by $(NH_4)_2SO_4$ in highly dilute solutions of serum. Not only albumin and globulin, but the subfractions of globulin are precipitable with varying concentrations of the salt; hence, globulin may be fractionated into gamma globulin, pseudoglobulin, and euglobulin with equal facility. When certain additional studies were made concerning the separation of acid insoluble proteins derived mainly from the globulin fractions, it was found that these were precipitable in acetate buffer at pH 5.1 and 6.0. In every instance, despite the method of precipitation, the protein concentration was estimated from the observed turbidity. The results obtained with this micromethod deviate less than 5% from Kjeldahl values, and the method provides data in close accord with electrophoretic studies. In contrast to Na_2SO_4 and the Kjeldahl procedures, the use of $(NH_4)_2SO_4$ and turbidity requires no lengthy filtration at elevated temperatures and no elaborate and time-consuming analyses for nitrogen. Compared to electrophoresis, the simplicity of technique and nominal cost of this method are distinct advantages. Scores of duplicate analyses can be accomplished within one day, but apart from speed and convenience as well as economy, the amount of serum required is a small fraction of that demanded by the more elaborate procedure. Furthermore, the turbidimetric method can be constantly checked against standards of known protein concentration. Hence there need be no dependence on other analytical procedures.

FOREIGN

Ann. Chirurgiae et Gynaecologiae Fenniae, Helsinki

41:69-148 (No. 2) 1952. **Partial Index**

*Studies on Clinical Use of Arterenol. A. Pekkarinen and L. Aro.—p. 69.
Observations on Clinical Features and Treatment of Bronchial Adenoma. O. Peräsalo.—p. 86.
Uterine Prolapse in Nullipara. P. A. Järvinen.—p. 108.
Hidradenoma and Hidradenocarcinoma Vulvae. O. Kinnunen.—p. 119.
Intravascular Erythrocyte Clumping During Menstruation. H. Zilliacus.—p. 125.

Clinical Use of Arterenol.—At the first surgical clinic of the university in Helsinki, a large number of patients with acute irreversible shock caused by disease, hemorrhage, anesthesia, or trauma were given 4 cc. of a 1:1,000 arterenol solution added to 1 liter of isotonic sodium chloride solution, 5% dextrose, or aminosol® (a protein hydrolysate) with dextrose by continuous intravenous drip. The arterenol infusion was given for 4½ to 20 hours, at a rate of 0.05 to 0.23 μg per kilogram of body weight per minute, the total amount of arterenol ranging from 2 to 8 mg. These patients, who had not responded to transfusions of blood, plasma or other fluids, the use of Trendelenburg's position, and administration of cardiovascular stimulants and oxygen, showed a rapid return of systolic and diastolic pressures to normal when arterenol infusion was added to these other measures. By reduction of the number of drops of the arterenol solution after an adequate period of intravenous administration the patient could be made capable of maintaining his blood pressure satisfactorily without outward aid. Six patients, one with shock following splenectomy for panmyelophthisis, two with hemorrhagic shock following pneumonectomy, one with cyclopropane anesthesia shock following lobectomy for pulmonary tuberculosis, and one with traumatic shock following an automobile accident, are reported on in detail; five of these patients made an uneventful recovery after their circulation had been restored to normal by continuous intravenous infusion of arterenol, while the patient with traumatic shock died suddenly some hours after the arterenol infusion, probably as a result of injury in the thoracic cavity.

British Medical Journal, London

2:1371-1432 (Dec. 27) 1952

Neurology of John Hunter's Last Illness. R. Brain.—p. 1371.
Compressive Lesions of External Popliteal (Common Peroneal) Nerve. H. Garland and D. Moorhouse.—p. 1373.
*Christmas Disease: Condition Previously Mistaken for Haemophilia. R. Biggs, A. S. Douglas, R. G. Macfarlane and others.—p. 1378.
*Suppression of Malaria (P. Berghei) by Milk. B. G. Maegraith, T. Deegan and E. S. Jones.—p. 1382.
Hallux Valgus and Rigidus Treated by Arthrodesis of Metatarso-Phalangeal Joint. N. R. Smith.—p. 1385.
Thiouracil in Toxic Goitre: Late Results in Personal Series. D. Douglas and A. T. Kennie.—p. 1387.
Observations on Use of "Butazolidin" in Arthritis. H. R. Davies, R. W. Barter, A. Gee and C. Hirson.—p. 1392.
Case of Pulmonary Moniliasis. O. Barlas and M. Akyel.—p. 1394.
Attempted Suicide by Burning. R. J. V. Battle and H. E. S. Marshall.—p. 1397.

New Hemorrhagic Disease.—In seven male patients between the ages of 5 and 28 with clinical histories similar to those obtained from patients with hemophilia, the occurrence of a newly recognized condition is reported. The authors suggest the term Christmas disease to designate the condition after the name of the first patient with the disease who was studied. Hemophilia has been defined as a severe bleeding tendency in male patients dating from early infancy, inherited as a sex-linked recessive character in which there is failure or delay in blood thromboplastin formation owing to a deficiency in antihemophilic globulin. All of the authors' seven patients presented the usual laboratory features and four also the genetic features of hemophilia. In the blood of these patients antihemophilic globulin, however, was present in normal amounts, as it was suggested by the results of the following tests: When plasma samples from the patients were added to known hemophilic plasma the clotting time of the hemophilic plasma was shortened. The decrease in the clotting time was comparable to that caused by dilutions of normal plasma. Similarly, hemophilic and normal plasma dilutions shortened the patients' calcium clotting times. When the plasma of the second patient was mixed with that of the first, third and fifth patient and the plasma of the fifth patient with that of the seventh patient, there was no shortening of clotting time in the mixtures. When a potent preparation of antihemophilic globulin in the fibrinogen fraction of normal plasma was added to the plasma of the first patient, the clotting time was not shortened. Since small proportions of normal blood or plasma shortened the clotting time of the plasma of the authors' patients, it became clear that these patients lack a substance that differs from the antihemophilic globulin. The term Christmas factor is suggested for the factor, the deficiency of which was responsible for the grossly reduced thromboplastin formation in the blood of the authors' patients. The Christmas factor can be obtained most readily from serum, and in some features resembles the serum factor 7 of Koller and co-workers. It differs greatly from antihemophilic globulin, and the blood from patients with true hemophilia (antihemophilic globulin deficiency) is as effective as normal blood in correcting the clotting abnormality in the blood or plasma of patients with Christmas disease. In the treatment of hemorrhage in cases of Christmas disease, concentrated preparations of antihemophilic globulin are ineffective.

Suppression of Plasmodium Berghei Malaria by Milk.—Albino rats were given intraperitoneal injections of 0.2 ml. of blood diluted with citrated saline solution and containing the standard inoculum of one million red cells infected with Plasmodium berghei. The blood was obtained from an infected animal in which the parasitemia was high and rising. The experimental animals were placed on diets of cow's milk, reconstituted dried milk, and human milk, respectively, four days or more before being infected. To each kilogram of cow's milk and dried milk was added 5 mg. each of vitamins B_1 and B_6 and 50 mg. of calcium pantothenate. A normal laboratory diet was fed to the rats that served as controls for each experiment. Results of the experiments indicated that, in animals living on a diet of milk plus vitamins, there is suppression of the growth of blood-transmitted P. berghei. This was shown in the absence of parasites or the relatively light parasitemia that developed in rats on the milk diet compared with control animals given a normal laboratory diet. To the time of writing the authors studied only blood-transmitted P. berghei malaria. The true significance of the suppressive action of milk cannot be assessed until it has been examined in the mosquito-transmitted disease. Nevertheless, it seems clear that milk contains something that can inhibit or restrict the development of the asexual phase of blood-transmitted P. berghei in the rat. The authors believe that this is the first time a dietary factor has been shown to have a suppressive effect on a protozoal infection. Whatever the nature of this suppression, its demonstration seems likely at least to lead to some further information regarding the metabolism of the parasite. Some attention must now be paid to the effect of milk on human malaria. This effect may explain why severe malaria is not often seen in very young infants.

Cardiologia, Basel

21:773-828 (No. 6) 1952

Registration of Heart Sounds by Means of Differentiating Filters: Study of Standardization of Heart Sounds. H. Maass and A. Weber.—p. 773.
Studies of Ballistocardiography: II. Mean Normal Values, Ventricular Tension Time, and Duration of Mechanical Ventricular Systole. A. Sebastiani, R. Cassinis, B. Concina and G. De Simone.—p. 795.
*Comparative Effects of Coffee and Soluble Extracts of Coffee on Normal Persons and on Cardiac Patients. M. Polonovski, E. Donzelot, S. Briskas and T. Doliopoulos.—p. 809.
Danger of Using Morphine in Cor Pulmonale. S. Samúelsson.—p. 817.

Coffee and Heart Disease.—Polonovski and associates say that since soluble extracts of coffee have been prepared industrially, it has been asserted by some that these extracts are tolerated less well than coffee prepared from ground beans. It is also generally admitted that both ordinary coffee and the soluble extracts cause signs such as cardiac palpitation and nervous manifestations in normal persons and in cardiac patients. The authors tested 302 patients who had just been admitted to hospital, including 69 with cardiac complaints and 233 free from

heart disease. All of these patients received for 10 consecutive days a cup of coffee at their midday meal, but some drank extracts of coffee roasted in beans and others solutions of industrially prepared soluble extract. Generally speaking, normal subjects and cardiac patients tolerated soluble coffee extract as well as the infusion of bean coffee. Ordinary coffee, as well as decaffeinized coffee or soluble coffee extract, produced a slight acceleration of the pulse and a slight raising of the blood pressure in both normal persons and cardiac patients. Manifestations of sensitivity to highly roasted coffee, whether in the form of soluble extract, bean coffee or decaffeinized coffee, took the form of trembling, palpitations, insomnia, nervousness, nausea, fatigue, and extrasystoles. Caffeine, administered in the proportions contained in the coffee, ingested in the form of soluble extract or ordinary coffee did not produce disturbances in either normal patients or those with heart disease. It appears therefore that the extraction of other components of the coffee, apart from caffeine, and above all the degree of roasting, play a major part in the production of the various disturbances, particularly in the appearance of extrasystoles.

Chirurg, Berlin

23:545-586 (Dec.) 1952. **Partial Index**

*Metabolism After Total Extirpation of Stomach. M. Tomoda.—p. 545.
Hyperinsulinism: Concept, Diagnosis and Treatment. H. Berger.—p. 552.
Hypertension in Presence of Unilateral, Pyelonephritic Contracted Kidney. H. Manseck.—p. 557.
Treatment of Pertrochanteric Fracture of Femur. H. Mehlhorn.—p. 562.
Conservative Treatment of Ileostomy Fistulas. B. Kersting.—p. 564.
Surgical Replacement of Thumb. E. Dehne.—p. 566.

Metabolism After Total Gastrectomy.—For about 10 years Tomoda and his associates have made studies on more than 100 patients who had undergone total gastrectomy. Clinical observations as well as metabolic studies have disclosed that the metabolism of protein and carbohydrate in these patients is impaired, particularly in those who have an esophagojejunostomy. The disturbance in fat digestion and fat resorption can be reduced by Tomoda's modified surgical technique, which makes duodenal passage of the food possible. As regards the carbohydrate metabolism, the author says that the hyperglycemia that follows food ingestion in patients whose stomachs have been removed causes glycosuria, and this in turn is followed by hypoglycemia. He mentions methods of intestinal transplantation that might obviate this disturbance. The essential changes in the protein metabolism will eventually shorten the life of the person who has no stomach. A prehepatic disturbance of the protein metabolism results from abnormal protein cleavage in the small intestine, which in turn is caused by invasion of colonic organisms into the small intestine. The increased resorption of toxins such as indole in the portal vein system and inadequate utilization of foods in the small intestine are other factors in the deterioration of protein metabolism. The increased resorption of toxins impairs the hepatic function. This hepatic disturbance not only leads to agastric anemia but also reduces the body reserves and plays a part in production of hyperglycemia. It has been suggested by some that the stomach is merely a protective organ for the intestinal function, but Tomoda has furnished proof that the stomach plays an important role not only in the physiology of digestion but also in other metabolic functions. He suggests that his technique of complete removal of the stomach, which provides for a substitute stomach, will largely prevent these metabolic disturbances.

Edinburgh Medical Journal

59:573-610 (Dec.) 1952

*Chemotherapy of Urinary Tuberculosis. W. G. Wimsett.—p. 573.
Renal Tuberculosis: Its Pathogenesis and Management in Patients with Extra-Urogenital Disease. W. M. Borthwick.—p. 583.
Some Unusual Manifestations of Abortus Fever. A. W. Branwood.—p. 591.

Chemotherapy of Urinary Tuberculosis.—Between December, 1948, and December, 1951, a controlled trial was instituted of streptomycin therapy for tuberculous disease of the urinary tract. Streptomycin was given to 70 patients in two 0.5 gm. intramuscular injections daily for 90 days; another 67 patients served as controls. Both groups received similar general medical treatment. It was found that the treatment has no effect on an established caseocavernous lesion. The focus, while remaining active, may become shut off. Streptomycin therefore cannot be recommended to supplant surgery, and in clinical unilateral renal tuberculosis the diseased kidney should be removed. Streptomycin should not be used routinely in cases in which the disease is not amenable to surgical treatment, because, when there is an advanced bilateral renal lesion or an advanced lesion in a solitary kidney, no improvement in the kidney lesion can be anticipated and vesical contracture may be accelerated where cystitis was previously present. It may be of value before and after surgical treatment. It is beneficial in secondary tuberculous cystitis, but this effect appears to be related to the presence and degree of disease in the upper urinary tract. In patients with a unilateral renal lesion in whom the affected kidney has been removed, cystitis subsided and the urine became negative for tubercles in an appreciably larger number of cases in which streptomycin was used than in control cases. In patients with established bilateral disease, no beneficial effect on the bladder resulted. The incidence of vestibular damage in streptomycin-treated patients was high. In a small proportion of cases the disturbance was severe, and in one such case cochlear damage, giving rise to deafness, occurred. Both the vestibular and cochlear damage was irreversible. The author feels that the results obtained in 20 patients who were treated with streptomycin and para-aminosalicylic acid cannot be strictly compared with those obtained with streptomycin alone, but combined therapy appears to afford greater protection to the contralateral kidney than streptomycin. The results obtained by some other investigators with streptomycin in the treatment of urinary tuberculosis are mentioned. Whereas some condemn the multiplicity and diverse combinations of drugs employed, the author feels that the variety of agents subjected to investigation is an index of the increasing ambition on the part of both surgeon and tuberculosis physician to solve the problem of renal tuberculosis. Chemotherapy has value in the treatment of early renal tuberculosis, protects the contralateral kidney, and improves the condition of the bladder in secondary tuberculous cystitis following nephrectomy. The majority of workers in this field are discarding the doctrine of immediate nephrectomy for renal tuberculosis. The patient should receive sanatorium treatment as soon as the diagnosis is established. He should be under the supervision of a tuberculosis physician, working as an integral part of a urological team.

Gazzetta Medica Italiana, Milan

111:285-314 (Nov.) 1952. **Partial Index**

Tocopherols and Eupaverin in Treatment of Peripheral Vascular Disease. P. C. Feraboli.—p. 285.
Therapeutic Findings on Effectiveness of New Preparation in Neurovegetative Dystonias. B. Zancan.—p. 289.
*Thiosemicarbazone in Therapy of Brucellosis and Possible Application of Semicarbazide Compounds in This Therapy. L. Cotti.—p. 297.

"Artrazone" in Treatment of Brucellosis.—"Artrazone" (a mixture of thiosemicarbazone, an antihistaminic, and an aminopyrine derivative) was used to treat five patients with brucellosis. Each patient received daily for 30 days 8 to 10 tablets of the drug equal to from 160 to 200 mg. of thiosemicarbazone and 2 to 2.5 gm. of the other constituents. With this therapy, the high temperature returned rapidly to normal and, therefore, the condition was ideal for intervention with vaccine. On the fifth day of treatment this was given intravenously in a dose of 50 million units, and it was repeated every five days thereafter in doses that were double the previous dose. "Artrazone" was not given on the day on which the vaccine was given. Four patients recovered completely. One patient had a relapse and was cured with aureomycin. The general condition was improved, a normal diet was possible, and a state of euphoria followed. There were no phenomena of intolerance to the drug, and the blood condition always remained good.

Journal of Hygiene, London

50:433-584 (Dec.) 1952

Variation of Bacillus Anthracis with Special Reference to Non-Capsulated Avirulent Variant. H. P. Chu.—p. 433.
Estimation in Vitro of Small Amounts of Diphtheria Antitoxin by Means of Haemagglutination Technique. S. Fisher.—p. 445.
*Sociologic Factors in Spread of Epidemic Hepatitis in Rural School District. J. Ipsen, W. R. Donovan and G. James.—p. 457.
*Nasal Mucus and Influenza Viruses. I. Haemagglutinin Inhibitor in Nasal Secretions. S. Fazekas de St. Groth.—p. 471.
*Id.: II. New Test for Presumptive Diagnosis of Influenza Infection. S. Fazekas de St. Groth.—p. 491.
Studies on Susceptibility of Rickettsia Burneti to Chemical Disinfectants and on Techniques for Detecting Small Numbers of Viable Organisms. R. A. Malloch and M. G. P. Stoker.—p. 502.

Spread of Epidemic Hepatitis in Rural School District.—The virus of epidemic hepatitis is transmitted in a variety of ways that contribute to the complexity of the epidemiology of the disease. Direct contact or air-borne infection is presumably the most frequent mode of transmission, with both droplet and finger transmission as likely mechanisms. Direct contact accounts for most sporadic and endemic cases of hepatitis, and undoubtedly also for the pandemic waves that have occurred two or three times in the past half century. Isolated major outbreaks of epidemic hepatitis in interpandemic periods are often due to a common source, involving transmission through water, food, or other vehicles. However, contact infection is always a possibility to be considered. The epidemic described in this paper occurred in a rural area of central New York in 1950. There were 176 cases, and jaundice occurred in 135. No common source could be demonstrated, and the transmission was believed to be due to human contact alone. The overall morbidity rate was about 5%, the attack rate among school children 22%, and among the adults and preschool family contacts of infected school children the attack rate was 18%, with no significant age difference in attack rate. Differences in attack rate in the various school grades were explained by higher number of siblings of children in certain grades. Household attack rates among nonschool persons were related to number of sick school children, family size, and hygienic standards of the home. The first of these factors seemed most important. More cases of jaundice occurred in families where the exposure was heaviest. Although it is believed that sufficient evidence is brought out to explain this epidemic on the basis of contact transmission from house to house, some vehicle transmission could have occurred within the home. Indeed, it is highly probable that the high attack rate in homes of low hygienic standard could have been caused by contamination of food or well water. The reasons why this rural area had a considerable epidemic of hepatitis are as follows. 1. The remoteness of the community over a number of years had favored accumulation of susceptible persons. 2. The construction of the consolidated school 10 years before the epidemic led to an aggregation of susceptible persons, which did not exist at the time when the children of the several villages met in one room schoolhouses.

Nasal Mucus and Influenza Viruses.—The first of these two reports on nasal mucus and influenza viruses describes a technique by which minimal changes in hemagglutinin inhibitors can be detected. Minimal amounts of influenza viruses (less than one agglutinating dose) are capable of causing significant alteration in the inhibitor index of the mucus upon interaction in vitro for 60 minutes at 37 C. The second communication examines the merits of this new diagnostic method. Changes in the inhibitory properties of human nasal mucus were found to be positively correlated with objective signs of influenza virus infection during the 1950 epidemic. In approximately 80% of the cases the inhibitor index was significantly increased during the acute stage of the disease, and reverted to normal during convalescence. Various respiratory diseases other than epidemic influenza did not cause similar changes. Examination of the inhibitory pattern of nasal mucus is proposed as a presumptive test for influenza virus infection. This test is inferior in specificity to the accepted laboratory tests, but has the great advantage that it can be applied in the acute phase of the disease, is easy and inexpensive to perform, and gives an answer within an hour's time. Its main scope lies in the screening of larger groups, and in deciding from which patients the isolation of virus should be attempted. It might also be useful in following individual patients. It should always be regarded as an additional and not as an alternative technique. As there is no perfect diagnostic method for influenza at present, the only way accurate information can be gained is by balancing and controlling the imperfections of one test by the parallel use of others.

Lancet, London

2:1235-1278 (Dec. 27) 1952

Precision in Diagnosis. J. W. Todd.—p. 1235.
Influence of Mercurial Diuretic on Mechanism of Diuresis in Congestive Cardiac Failure. T. E. Lowe.—p. 1238.
Cutaneous Arterial Spiders Following Use of Adrenocorticotropic Hormone. J. H. Solem.—p. 1241.
"Proteinuria" in the Newborn. S. A. Doxiadis, M. K. Goldfinch and N. Cole.—p. 1242.
*Perforation of Apparently Normal Colon After Barium Meal. J. C. B. Serjeant and J. A. Raymond.—p. 1245.
Acute Perforation of Duodenal Ulcer Immediately After Barium Meal: Complicated by Intestinal Obstruction. C. P. de Fonseka.—p. 1246.
Vasomotor Disturbance in Pink Disease. D. G. Vulliamy.—p. 1248.
Acute Ethylene Glycol Poisoning Treated with Calcium Salts. A. P. Grant.—p. 1252.
Pellagra Associated with Crohn's Disease. J. R. Armstrong.—p. 1253.

Perforation of Normal Colon After Barium Meal.—Although several cases of perforation of a diseased colon after a barium meal have been reported, Sergeant and Raymond feel that this is the first report of perforation of an apparently normal colon after a barium meal. The patient, a 67-year-old woman, recovered after closure of the perforation and proximal colostomy. The original diagnosis of nervous dyspepsia in this case was supported by the absence of any abdominal lesion other than the accidentally perforated colon. The perforation probably took place within 24 hours of the administration of the barium, which by then had reached the pelvic colon and rectum, where it had formed solid hard masses. Perhaps the patient had previously been a little dehydrated, causing more absorption of water than usual from the barium during its passage through the colon. It is difficult to imagine that a necrosis pressure ulcer could develop in so short a time. The subsequent rectal washouts must have contributed to the severity of the peritonitis, but in retrospect it seems clear that the perforation had taken place some hours earlier. Possibly a barium mass was blocking the breach but was forced through it by the enemas.

Medical Journal of Australia, Sydney

2:761-800 (Nov. 29) 1952

Depressive Mental Illness. B. Mulvany.—p. 761.
*Vaccination Against Tuberculosis with BCG Vaccine. F. Fenner.—p. 767.
Practical Method for Determining Sensitivity of Microorganisms Responsible for Various Infections. I. Macgowan and R. Freake.—p. 770.
Management of Late Acute Appendicitis. L. I. Burt.—p. 773.
Fibrocystic Disease of Pancreas. G. E. M. Scott.—p. 774.
Fibular Osteotomy in Treatment of Congenital Club-Foot. F. Stonham.—p. 776.

BCG Vaccination Against Tuberculosis.—After presenting a brief history of the BCG vaccine, Fenner discusses some of the bacteriological problems involved and reviews evidence of its efficacy. He shows that there are still gaps in knowledge of BCG vaccination. The mechanism of immunity in tuberculosis on which the use of BCG vaccine depends is still not known. Although it is known how to produce a vaccine of high potency and viability and how to maintain seed culture so as to ensure genetic stability of the strain, a ritual of vaccine production and maintenance of the strain laid down 30 years ago by Calmette is still adhered to. Nevertheless, there is no doubt now that BCG is both safe and in many epidemiological situations effective in materially reducing the mortality and morbidity due to tuberculosis. Australia is just now embarking on BCG vaccination, and the author hopes that it will be possible to surmount some of the practical difficulties.

Minerva Chirurgica, Turin

7:799-838 (Nov. 15) 1952. **Partial Index**

Echinococcus of Lung. M. Mini.—p. 799.
Clinical and Histological Study of Benign Tumors of Stomach. G. Tartarini.—p. 805.
Use of Dermis and Subcutaneous Tissue in Surgical Repair of Tendons: Preliminary Note. M. Bogetti, S. Fabri and C. Bubbio.—p. 811.
*Hyaluronidase and Infections. M. De Gregori and L. Vallega.—p. 813.
Resuscitation with Blood Transfusion into Common Carotid Artery. V. Nociti.—p. 816.
*New Therapy for Thrombosis. M. Campani, I. Florio and F. Bono.—p. 819.

Hyaluronidase and Infections.—Hyaluronidase of testicular origin combined with penicillin or streptomycin was used to treat 12 patients with subacute or chronic infections, such as phlegmons, osteomyelitis, or abscesses. A dose of 250 viscosity units immediately followed by the antibiotic in the usual quantity was instilled locally every other day, while at the same time the antibiotic was also given intramuscularly. In all but two patients the infected focus was drained surgically. In all of the patients the discharge increased during the first days of treatment, the exudate underwent rapid liquefaction, and on the second or third day the viscosity had diminished. In one patient with a pulmonary abscess and secondary pleural empyema, the suppurative cavity was cleansed and cured in 15 days. In another patient a secreting fistulous sinus, which was secondary to pleurotomy, was cicatrized in 10 days, and roentgenograms showed that the pleural effusion had disappeared. There were never signs of hemorrhage, and this suggests that hyaluronidase did not exert a lytic action on the vessel wall. In adequate doses hyaluronidase can be a good adjuvant in surgical treatment of subacute or chronic infections.

"Fibrinoclasi" in Treatment of Thrombosis.—Studies were made to ascertain the possibility of introducing directly into the blood stream a drug that could change the anatomical and clinical aspects of arterial and venous thrombosis by a direct or indirect action on the clot. The authors used "fibrinoclasi," which is a mixture of two pancreatic enzymes. The enzyme that is present in the larger quantity has a fibrinolytic action, and the other a lytic action on desoxyribonucleic acid. This mixture was given to four patients with thrombophlebitis of the legs and to one with thrombosis of the axillary artery. The patient with arterial thrombosis was an 84-year-old woman in poor general condition with myocarditis and arteriosclerosis and gangrene to the right arm attributable to this thrombosis. She was given massive doses (as much as 200 mg. daily) of fibrinoclasi. After two days the local inflammation had disappeared, the swelling had diminished, and the amputation was facilitated. There were no side-effects, and the postoperative course was uneventful. Another patient with extensive thrombophlebitis of the left leg was hospitalized, and large doses of the mixture were given for three days and then decreased. The inflammatory reaction diminished, and phlebography revealed that the vessel had slowly become pervious although it was not entirely open. The patient left the hospital against the physician's advice, and returned after five days with a pain at the base of the right lung. After a diagnosis of pulmonary embolism, the enzymatic treatment was resumed for 7 days, and on the 11th day the patient was cured. The other three patients also recovered with the same therapy. The activity of this drug was found to be optimum at a pH of 6.47 and 7.38. This drug is much more effective when the clot is of recent formation; magnesium does not alter its enzymatic activity, whereas with chloroform the fibrinolytic process is accelerated. The prothrombin time is prolonged following administration of this drug, but after a few hours it returns to normal. One hour after the injection the coagulation time is about double the value found before the injection. Widal's test proved that this drug does not cause production of specific antibodies. The only side-effect is intense shivering and tremor of the entire body, even if the drug is highly diluted; this can be eliminated, however, by injecting 1 ml. of the drug 45 minutes before the entire dose is given. There were never in these patients manifestations of functional alteration or pain in the liver, kidneys, and heart.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

96:2913-2976 (Nov. 22) 1953. **Partial Index**

*Familial Occurrence of Fat-Containing Vacuoles in Leukocytes of Brothers in Whom Progressive Muscular Dystrophy Developed Later. G. H. W. Jordans.—p. 2919.
*Gold "Nephrosis." R. K. W. Kuipers.—p. 2923.
Treatment of Hypertension with Methonium Compounds. H. J. Viersma.—p. 2929.
Results of Surgical Treatment of Essential Hypertension. H. J. J. Fesevur.—p. 2938.
Malignant Hypertension in 12-Year-Old Girl: Treatment with Hexamethonium Compounds (Differential Diagnostic Exclusion of Pheochromocytoma). S. E. Bos, Kho Lien Keng, C. M. J. Velzeboer and S. de Vries.—p. 2943.

Vacuoles in Leukocytes and Progressive Muscular Dystrophy.—In a man, aged 24, who complained of abdominal pain, examination of the blood revealed vacuoles in the leukocytes that were stainable with Sudan III and that gave the impression that they contained fat. In order to determine whether this blood change was familial, studies were made on 39 persons of different generations of this family. The blood of a brother, aged 21, was found to contain the same vacuolated leukocytes, the vacuoles being stainable by Sudan III. This brother felt entirely well at this time. At several subsequent examinations, the blood of both men was always found to contain the Sudan-stainable vacuoles in the leukocytes, and the fat content of the blood was always abnormal. About three years after the first examination both men complained of gradually increasing muscular weakness. Microscopic examination of muscle tissues disclosed vacuoles, atrophy of muscle fibrils, and formation of connective tissue. Treatment with aminoacetic acid was without effect on these patients, and in both severe progressive muscular dystrophy of Erb's type gradually developed.

Gold "Nephrosis."—In the four cases of infectious chronic polyarthritis described in this paper, severe albuminuria developed in the course of gold therapy. This albuminuria, which completely disappeared in all cases and which apparently caused no lasting damage to the kidneys, was caused by a so-called gold nephrosis. The four cases presented were observed among a total of 2,000 patients who received gold therapy for chronic polyarthritis. Despite the somewhat alarming onset of this albuminuria, the prognosis seems to be favorable.

Nordisk Medicin, Stockholm

48:1611-1646 (Nov. 21) 1952

Pediatric Anesthesia. O. Secher.—p. 1611.
*Clinical Test of Synthetic Hyaluronidase Inhibitors in Rheumatoid Arthritis. L. Hahn, S. Thune and E. Truedsson.—p. 1615.
Reliability of Laryngeal Swab Method for Demonstration of Tubercle Bacilli. S. Roald and O. K. Thomassen.—p. 1619.
Vitamin B_{12} and Folic Acid in Small Doses Orally in Pernicious Anemia. A. Schrumpf.—p. 1621.
Wallenberg's Syndrome (Occlusion of Inferior Posterior Cerebellar Artery). P. A. Stensrud.—p. 1622.

Clinical Test of Synthetic Hyaluronidase Inhibitors in Rheumatoid Arthritis.—Three synthetic hyaluronidase inhibitors—polymerized hexahydroxy-tricarboxy-triphenylmethane (compound 21P), polymerized tetrahydroxy-dicarboxy-diphenylmethane (compound 7P) and polymerized hepthydroxy-tricarboxy-triphenylmethane (compound 16P)—were tested by Hahn and his associates in 101 cases of active rheumatoid arthritis. The patients included 36 males and 65 females, aged from 7 to 62. The duration of the disorder before examination was from 1 to 27 years. None of the patients showed any tendency to spontaneous remission before treatment. Symptoms from a total of 1,490 joints were regularly recorded during the test. Compound 21P, given to 50 patients for an average of 41 days, in daily doses varying from 4.5 to 10 gm., had a favorable effect in all cases and almost no side-effects. Compound 7P was given to 28 patients for an average of 29 days, in daily doses varying from 3 to 9 gm., with demonstrable clinical effect and slight side-effects, and compound 16P, given to 23 patients for an average of 21 days, in daily doses varying from 3 to 9 gm., caused too marked side-effects.

Prensa Médica Argentina, Buenos Aires

39:2693-2756 (Nov. 7) 1952. **Partial Index**

Surgical Treatment of Mitral Stenosis in 30 Cases. F. E. Tricerri. —p. 2693.
A Rare Roentgen Image of Diaphragmatic Origin. E. L. Capdehourat and R. A. Gini.—p. 2704.
*Cancer of Lip: Clinical and Therapeutic Study of 150 Patients. F. R. Pilheu and J. Manrique.—p. 2706.
*Brucellar Psychic Disorders. J. P. Goodbar.—p. 2730.

Cancer of the Lip.—In nearly three decades, 150 patients with cancer of the lip have been observed at the department of surgery of the Hospital de Clinicas of Buenos Aires. There were 144 men (96%) and six women (4%). The average age was 56 years. A history of cancer of any site in relatives was encountered in eight patients. Seventy-eight patients were smokers; nine used tobacco-pipe. Seventeen patients complained about previous lesions in the lips. Ninety-three (62%) of the patients reported for first examination during the first year of the disease, 20 (13.3%) during the second year, and the rest after three or more years. There was only one labial lesion in 146 patients, two in three patients, and three in one, with a total number of 155 labial lesions; 139 of these lesions were on the lower lip and 16 on the upper lip. The ulcerative and mixed clinical forms were the most frequent. They were observed in 52 and 86 cases respectively. Squamous cell carcinoma was the most frequent histological form, occurring in 130 lesions (84%). Unilateral or bilateral cervical adenopathy was observed during the first examination of the patients in 65 patients with cancer of the lower lip and in 3 with cancer of the upper lip. The lesions proved to be metastases in only 7 cases out of 34 in which the lymph nodes were removed. Most of the patients in this series were treated by surgery, radium, or roentgen therapy. The surgical treatment consisted of ample resection, direct approach of the raw tissues after the operation, and use of prostheses. The results were good and have been maintained for more than three years in half the patients who reported for evaluation of late results. The author believes that (1) cervical adenopathy has no relation to the duration and course of cancer of the lip; (2) the nodes should be removed within a month after completion of treatment of the labial lesion; and (3) prophylactic removal of cervical nodes is unnecessary when the nodes are not swollen.

Psychic Disorders in Brucellosis.—Chronic brucellosis may produce disorders of memory, affect, and will. When these symptoms are observed in association with asthenia, headache, auditory and vestibular disorders, osteoarticular pain of the meningitic, radicular or neuritic type and sexual disorders, a diagnosis of chronic brucellar neurosis is indicated. The most frequent form is anxiety neurosis. When it appears in association with the aforementioned symptoms and the tests for Brucella are positive, a positive diagnosis can be made. The tests include Burnet's intradermal reaction, the opsonocytophagic index, and the changes of the hemogram (anemia and leukopenia). The erythrocyte sedimentation rate is normal. Blood cultures and the Huddleson serum reaction give negative results in a large percentage of the cases. In the three subjects of this report the symptoms were predominantly psychic, the somatic symptoms were typical, and the tests for Brucella gave positive results. In the first case the disease and its neurosis had lasted for one year when the patient was observed. Complete cure of both the disease and the neurosis was obtained with administration of vaccines of Brucella abortus. The second patient, a man of 30, had had meningomyeloradiculitis and spondylitis associated with anxiety neurosis for four years. The osteoarticular disorders were controlled with aureomycin and dihydrostreptomycin. The remaining psychic disorders were gradually controlled with brucellar vaccines, which were given in small progressive doses. The third patient, a woman of 28, had suffered with the disease and associated anxiety neurosis and irritability for seven years. Brucellar vaccines in small progressive doses for four months normalized the blood and controlled the symptoms of brucellosis but the neurosis remained unchanged. Psychosexual trauma caused by the husband was discovered. Psychotherapy and collaboration of the husband resulted in complete cure of the patient.

Revue de la Tuberculose, Paris

16:908-1074 (Nos. 10-11) 1952. **Partial Index**

CORTICOTROPIN AND CORTISONE IN TUBERCULOSIS

Effect of Cortisone and Corticotropin on Normal Guinea Pigs and Rabbits. Pierre-Bougeois, Vic-Dupont, R. Mollon and C. Blatrix. —p. 908.
Effect of Cortisone and Corticotropin on Tuberculous Guinea Pigs and Rabbits. Pierre-Bourgeois, Vic-Dupont, R. Mollon and C. Blatrix. —p. 912.
Variations in Tuberculin Allergy Under Influence of Corticotropin and Cortisone on Experimental Tuberculosis in Animals and in Human Tuberculosis. Pierre-Bourgeois, Vic-Dupont and M.-T. Nahel.—p. 919.
*Effect of Corticotropin and Cortisone on Tuberculosis in Man. Pierre-Bourgeois, Vic-Dupont, P. Sourdat and C. Blatrix.—p. 929.
Study of 297 Cases of Pulmonary Tuberculosis Without Relapse for 10 Years or More. D. Douady, R. Cohen and P. Ezra.—p. 940.
Late Pleural Effusions in Long-Continued Pneumothorax. A. Bernou, J. Tricoire and G. Blandin.—p. 969.

Effect of Corticotropin (ACTH) and Cortisone on Tuberculosis.—Tuberculosis may develop silently during treatment with corticotropin (ACTH) and cortisone. Systematic radiological and bacteriological examinations will lead to its discovery, but if it is not detected in the course of treatment, it will appear with the usual symptoms of fever, pain, meningeal complications, etc., when administration of the hormone is suspended. Recognition of the part played by adrenocortical hormone therapy in the development or reactivation of tuberculous lesions led to analysis of its effect on patients with active tuberculosis. The difference between the improvement in the general condition and the intensification of the lesions is pronounced: the patient becomes euphoric and confident; his appetite returns and he gains weight; a decline in the temperature often occurs; and dyspnea and cough are reduced. Radiological examination may show (1) extension of the lesions and increased cavity formation; (2) slight but unimportant improvement; or (3) no change. The aggravation of the lesions noted in most cases is often rapid and extensive. Relative survival is apparently increased by corticotropin: in spite of the aggravation of the disease, four patients who were in the terminal stages lived several weeks longer than might have been expected, presumably because of the effect of corticotropin on their general condition. The mechanism by which the aggravation of the lesions is produced is not known, but rapid liquefaction of caseous tissue in these patients leading to increased expectoration was shown radiologically by intensification of the cavitary images and was confirmed at autopsy in three cases. This phenomenon may explain both the reactivation of old lesions, which are often caseous, and the resulting bronchogenic dissemination. Cortisone and corticotropin should not be given to patients with active tuberculosis; patients with inactive tuberculosis who must be given adrenocortical hormone therapy should be kept under constant observation not only during the treatment but for some time after its suspension. Patients entirely free from tuberculosis are usually, but not always, exempt from danger; in this connection, it must be remembered that the antibiotics are relatively inactive when combined with corticotropin or cortisone.

Semaine des Hôpitaux de Paris

28:3963-4046 (Dec. 30) 1952. **Partial Index**

Hypothalamus and Diabetes. J. Weill and J. Bernfeld.—p. 3963.
*Myasthenic Syndrome Frequently Encountered in Chewers of Tobacco. R. Coulonjou and A. Salaun.—p. 3968.

Myasthenic Syndrome in Chewers of Tobacco.—Several hundred cases of a myasthenic syndrome traceable to improperly manufactured chewing tobacco were observed in Brittany between 1944 and 1949. The patients were manual workers, from 25 to 64 years of age; many had a history of chronic alcoholism. The onset was usually insidious, with fatigue appearing in the afternoon and reaching its maximum in the evening. Walking was made difficult by the fatigability of the legs; frequent rests were required, and falls due to sudden collapse often alarmed the patients. The arms and neck were

also affected, though less often, and involvement of the masticatory muscles made eating difficult. Swallowing was impeded, and speech became indistinct. Ocular symptoms occurred, but were less frequent. Various secondary neurological disturbances were noted in about half the cases; lumbar pain accompanying maximum fatigue and preceding the falls was felt by some patients, and a polyneuritic syndrome was occasionally present. Weight loss, when present, resulted from mechanical difficulties in eating; loss of appetite was rare. The blood pressure was frequently lowered. Adrenal insufficiency and vitamin deficiency were not apparent, and there was no indication of psychic disturbance. Electromyographic studies could not be made as often as desired, but a positive Jolly reaction was recorded on three occasions. Treatment (before the toxic origin of the condition became known) with neostigmine (prostigmine®), and vitamin B_1 and strychnine in cases showing polyneuritic complications, resulted in improvement. Withdrawal of the toxic agent later led to rapid and complete recovery. Differentiation from myasthenia gravis was based on the comparative infrequency of ocular symptoms and the predominance of those noted in spinal forms of myasthenia. Chewing tobacco was discovered to be responsible for the syndrome. Because of the war, quids for chewing were being made largely from indigenous tobacco; the smaller size of the leaves, which prevented airtight wrapping, and defects in manufacture led to fermentation in the stocks. No adulteration with other plants or chemical substances was practiced, but the flavor of the quids was often distasteful. Myasthenic symptoms were not found in workers employed in tobacco manufacture, and it was noted that, while many chewed tobacco, they used fresh clippings. Specimens of chewing tobacco taken from patients were found to contain Clostridium perfringens of extreme toxicity; in addition, the nicotine content was very high. Fermentation was not found in tobacco used by healthy persons. The high nicotine content alone could not have caused the symptoms, although nicotine may produce severe asthenia. Cl. perfringens is known to yield both a neurotoxin and a myotoxin, and while extensive research would be needed to establish its effect when combined with nicotine, there can be no doubt that it entered into the pathogenesis of the syndrome.

Ugeskrift for Laeger, Copenhagen

114:1627-1672 (Nov. 13) 1952. **Partial Index**

Medicolegal Application of Rh Grouping Tests in Paternity Cases. Review. S. Lyndrup.—p. 1627.
*Treatment of Acute Barbiturate Poisoning Without Use of Central Analeptics. J. Rosen.—p. 1636.
Mobile Oxygen Apparatus for Treatment of Acute Narcotic Poisoning. J. Rosen.—p. 1640.

Treatment of Acute Barbiturate Poisoning Without Analeptics.—Rosen reports on 21 cases of severe barbiturate poisoning treated in 1951, in 9 men and 12 women, aged from 18 to 84, with complicating diseases in 5. The patients had been unconscious for an average of 64 hours (minimum of 22 hours, maximum of 169 hours). Treatment consisted of (1) continuous administration of moist oxygen through respiratory passages made patent by bronchoscopic aspiration and peroral intubation; (2) administration of blood, concentrated dry serum, or the plasma substitute dextran ("macrodex") in cases with low blood pressure and probable hemoconcentration, followed later by 1,000 to 1,500 ml. of 5% glucose solution per 24 hours; and (3) penicillin administration, systematic turning of the patient, percussion of the thorax, and massage of the lower extremities as prophylaxis against pneumonia, atelectasis, decubitus ulcers, and thrombosis. Central analeptics were given in only two insignificant doses in one patient. Three patients died. Pulmonary complications occurred in 3 cases, blood pressure below 90 mm. Hg in 11, and pulmonary edema in 3. The relative infrequency of pulmonary edema is ascribed to conservatism in parenteral administration of fluids, especially fluids containing sodium. In two cases with complete respiratory paralysis artificial respiration was carried out. In four cases acute laryngeal changes after the endotracheal manipulations necessitated reintubation. Henceforth tracheal tubes of smaller dimensions and softer rubber will be employed and shifted less often. The author does not believe that use of central analeptics would have reduced the mortality or the number of complications.

114:1673-1714 (Nov. 20) 1952. **Partial Index**

*Corticotropin Treatment of Some Neurologic Diseases. T. Fog.—p. 1677.
*Bishydroxycoumarin Treatment of Disseminated Sclerosis. P. Thygesen.—p. 1685.
Cerebral Palsy: Preliminary Report on Incidence, Disease Forms, and Needed Treatment in Age Groups Up to 16 Years. O. Scheel Thomsen.—p. 1691.

Corticotropin Treatment of Some Neurological Diseases.—Fog reports on 31 patients with disseminated sclerosis treated with corticotropin (ACTH), in most of whom the 17-ketosteroid excretion was determined daily. He concludes that corticotropin can hardly be of practical importance in the treatment of stationary cases of disseminated sclerosis but can be tried in all cases of acute disseminated sclerosis or disseminated encephalomyelitis. The poor clinical effect in cases of longer standing is due partly to extensive and irreversible changes and partly to decreased suprarenal reactivity to corticotropin. Tests suggested that corticotropin may perhaps be of practical value in the treatment of arachnoiditis, meningomyelitis, polyradiculitis, and possibly also monoradiculitis resistant to treatment.

Treatment of Disseminated Sclerosis with Bishydroxycoumarin.—Thygesen found that the spontaneous course of disseminated sclerosis could not be changed by bishydroxycoumarin (dicumarol®) treatment. New symptoms became manifest and old symptoms were intensified or recurred, independently of the treatment. Remissions occurred in accordance with the type of attack, regardless of the treatment. In an observation period averaging 18 months 60 patients with disseminated sclerosis were followed on the average of every three weeks. The material did not include any cases in which there had been a single initial symptom or cases of acute, primarily demyelinizing, disease. During bishydroxycoumarin treatment for an average of 10.9 months, 35 patients had a total of 34 attacks; during 10.6 months' follow-up after withdrawal of the bishydroxycoumarin these patients had 41 attacks. In the course of 13.7 months 25 untreated patients had 30 attacks.

Zeitschrift für Kreislaufforschung, Darmstadt

41:881-960 (Dec.) 1952. **Partial Index**

Vector and Differential Interpretation of Electrocardiogram. K. E. Rothschuh.—p. 881.
Phonocardiographic and Circulatory Dynamic Investigations in Irregularities in Cardiac Function. E. Stein, P. Schölmerich and P. Engelbertz.—p. 908.
*Computation of Area of Orifice of Stenotic Heart Valves Demonstrated in Mitral and Pulmonary Stenosis. O. Bayer, H. H. Wolter, I. Teige and R. Rippert.—p. 926.

Area of Orifice of Stenotic Heart Valves.—The prognosis in cardiac surgery has increased the efforts of clinicians to ascertain pathological changes in the circulatory organs with some degree of exactness. The heart valves are especially critical points in the circulatory channels, and for this reason the computation of the area of the orifice of stenotic valves is especially important, especially since there is a close relation between this area, the volume of blood passing through it, and the pressure gradient at the valve. Bayer and associates determined the area of the valve orifice in 20 patients with mitral stenosis and in seven patients with congenital pulmonary stenosis, utilizing the formula developed by Gorlin and Gorlin. In patients with mitral stenosis the area of the orifice was found to vary between 0.6 and 2.8 sq. cm. When the values computed on the basis of the Gorlin formula were compared with measurements obtained in 12 patients either at operation or necropsy, it was found that the differences did not exceed 0.1 to 0.2 sq. cm. There was considerable parallelism between the clinical manifestations and the degree of valvular stenosis. Operation is generally indicated when the opening area of the mitral valve is less than 1.5 sq. cm. but especially when it is less than 1 sq. cm. In the seven patients with stenosis of the pulmonary valve, the opening areas were computed to be between 0.4 and 1.2 sq. cm. The indication for Brock's operation is believed to exist only if the stenotic opening has an area of less than 0.8 sq. cm.

BOOK REVIEWS

Practical Dermatology for Medical Students and General Practitioners. By George M. Lewis, M.D., F.A.C.P., Professor of Clinical Medicine (Dermatology), Cornell University Medical College, New York. Cloth. $7.50. Pp. 328, with 99 plates. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W.C.2, 1952.

This elementary textbook and practical guide to dermatology will be useful to medical students and general practitioners because of its conciseness, its clear and logical organization, and its many illustrations. Over 400 photographs of different dermatoses, all well correlated with the text, are an outstanding feature that will be appreciated by the beginning student. Their value would be even greater if some were in color and if close-up views showing the details of individual lesions accompanied more of the photographs showing general distribution and arrangement of the lesions. Emphasis is placed on practical techniques of diagnosis and treatment. Discussions of histology, mycology, and bacteriology, and, for the most part, physiology, chemistry, pharmacology, and embryology have purposely been omitted. The chapters on general dermatological diagnosis and treatment provide orientation in the field, and the dermatological formulary gives specific details of treatment. The book is attractively printed and bound. Liberal use of subheadings and of boldface type within paragraphs facilitates rapid reference, as does an adequate index. A list of dermatological texts, journals, monographs, and papers is provided for supplementary reading.

Therapeutic Meal Plans: A New Diet Manual. Prepared by Department of Dietetics and Nutrition, University of Kansas School of Medicine, Lawrence. Edited by Virginia Toews, Berdena Rosenow and Ruth Gordon. Cloth. $3. Pp. 111. University of Kansas Press, Lawrence, Kansas, 1952.

This manual comprises more than 70 different therapeutic diets formulated with emphasis on variation in content of specific nutrients rather than on pathological conditions for which diets are indicated. Practically all possible combinations of nutrients have been considered. The following information is given for each diet: approximate nutrient content, necessary foods, additional foods, foods to be omitted, special rules, and suggested meal plans. Infant and child feeding are discussed, and a table listing comparative values of infant foods is included.

Some confusion results from the large number of diets considered. The arrangement is not entirely satisfactory, and it is difficult to find material quickly. An unfortunate item is a chart containing outdated material and erroneous statements relative to characteristics, functions, and sources of vitamins, and the clinical manifestations of deficiency of these factors. The book should be a useful reference for dietitians, particularly in small hospitals. Physicians will find the succinct presentation of each diet, with illustrative meals plans, of practical value.

Congenital Anomalies of the Heart and Great Vessels. By Maurice A. Schnitker, B.S., M.D., F.A.C.P., Director of Medicine, St. Vincent's Hospital, Toledo, O. Cloth. $8. Pp. 306, with 19 illustrations. Oxford University Press, 114 Fifth Ave., New York 11, 1952.

In this monograph the author has assembled recent and established data dealing with the rapidly expanding subject of congenital heart disease. This book is intended primarily to help the physician and student to become oriented in the clinical aspects of the subject. The author begins with a summary of the embryology and morphology of the heart, then deals with the etiology, incidence, and associated phenomena. The rest of the monograph is a compilation of the various congenital states, classified as acyanotic and cyanotic. The complicating conditions associated with congenital heart disease are presented last.

This type of presentation is at times repetitious. The advantage of the arrangement is that any reader can find the pertinent material under each type of lesion without constantly cross-referring to other sections. The style is sometimes cumbersome, and the material is not so easy to follow as might be expected in a book intended for the nonspecialist or student. The monograph is also inadequate in the development of the modern physiological and cardiodynamic viewpoints. It is written in the tradition of the two major contributions on this subject by Maude Abbott and Helen Taussig but is in no way as monumental as either work. Recent literature is adequately covered, and the discussion is critical. This book is suitable for the physician or student who wishes to orient himself in the subject in a relatively simple manner or to learn about a particular lesion.

Textbook of Surgery. Edited by H. F. Moseley, M.A., D.M., M.Ch., Assistant Professor of Surgery, McGill University, Montreal. With foreword by G. Gavin Miller, M.D., C.M., M.Sc., Chairman of Surgical Department, McGill University. Cloth. $15. Pp. 896, with 460 illustrations and 46 color plates. C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, 1952.

This textbook is presented with a foreword by Gavin Miller, who states the background of the book in the following terms: "The undergraduate must be taught the principles of surgery, the appreciation of clinical signs and symptoms, and methods of examination, so as to arrive at an accurate diagnosis. He should know when surgery should be recommended and have a fair idea of what is the best surgical treatment so that he can refer his patient to the surgeon best qualified to carry out the definitive treatment." This book represents the collective thought of many Canadian surgeons, and many outstanding surgeons of Canada have contributed to this work. The volume is large, but it includes an enormous amount of material that is presented in a concise form. The references at the end of each chapter are well chosen and, in some instances, are profuse. The references are to many contributions from the U. S. The volume is well illustrated. This is an excellent volume that can be used by undergraduate students in medicine as well as graduate students in surgery. It is one of the best volumes of its type that has been published.

Grundlss der gynäkologischen Endokrinologie. Von Robert Wenner, Privat-Dozent für Geburtshilfe und Gynäkologie an der Universität Basel. Cloth. 28 Swiss francs. Pp. 339, with 228 illustrations. Benno Schwabe & Co., Klosterberg 27, Basel 10, 1952.

The author states that this book was written for students and general practitioners, but it will also prove useful to specialists in endocrinology and gynecology. It is divided into four parts: the chemistry and pharmacology of the various hormones, normal physiology of the hormones, diagnosis of hormonal disturbances, and hormonal disturbances and their treatment. Throughout the book there are tables of the different hormones and combinations of hormones available commercially, their proprietary names, forms, doses, and names of the manufacturers. There is a valuable summary of the important hormone determinations in children, preadolescent girls, adult women, pregnant women, menopausal women, men, and aged men and women.

The author overemphasizes and schematizes the hormonal treatment of many gynecologic conditions. This is unfortunate because very few hormonal disturbances can be treated routinely and schematically. The section on treatment of uterine fibromyomas with androgens should have been omitted. The author is also too optimistic about the benefits derived from the use of hormones for many extragenital disturbances. But the book is well written, the language is simple, and generally, but not always, the advice given concerning therapy is sound. Numerous clear and instructive illustrations and a very comprehensive bibliography are included at the end of the book.

The reviews here published have been prepared by competent authorities and do not represent the opinions of any official bodies unless specifically stated.

Chemistry of Carbon Compounds: A Modern Comprehensive Treatise. Volume I Part B: Aliphatic Compounds. Edited by E. H. Rodd, A.C.G.I., D.I.C., D.Sc. Cloth. Pp. 779-1462, with illustrations. Elsevier Press, Inc., 402 Lovett Blvd., Houston 6; 118 Spuistraat, Amsterdam, Netherlands, 1952.

This is a continuation of the first volume of a proposed five volume series on organic chemistry. It completes the systematic study of the chemistry of the aliphatic compounds. As mentioned in a previous review on volume I A, this series may be regraded as a successor to Richter's "Organic Chemistry," since the general framework of that treatise has been retained. The editors have also preserved the organization that Richter used. Chapters are organized on the broad concept that organic compounds other than hydrocarbons may be regarded as derivatives of alcohols or their oxidation products. This volume treats hydroxy-carboxylic and amino-mono-carboxylic acids; aldehydo-acids and keto-acids, carbonic acid; dicarboxylic acids; the tri-, tetra-, penta-, hexa-, and polyhydric alcohols and their oxidation products; and compounds related to these various groups. Simple and complex carbohydrates are extensively treated, and chapters on proteins and enzymes also are included. The amount and variety of material is large, but the treatment of the various subjects is brief, which is to be expected in a series that serves primarily as a concise reference work. Many references to the original literature as well as an adequate index are included.

Collected Papers of the Mayo Clinic and the Mayo Foundation. Volume XLIII, 1951. Edited by Richard M. Hewitt, B.A., M.A., M.D., and others. Cloth. $12. Pp. 833, with 174 illustrations. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W.C.2, 1952.

Each year the Section of Publications of the Mayo Clinic and Foundation compiles a bibliography of the articles published by members of the staff of the clinic during the preceding year. From this list a number of papers of special interest to the general practitioner, general surgeon, and diagnostician are selected for reproduction, in full or in part. Some material representative of the specialties and of basic science is also included. This year's volume, covering material published between Dec. 1, 1950, and Nov. 30, 1951, includes 604 papers. Of these, 75 are reprinted in full, 32 are abridged, 85 are abstracted, and 412 are presented by title only. The articles are grouped under the following headings: alimentary tract; genitourinary diseases; ductless glands; blood and circulatory organs; skin and syphilis; head, trunk, and extremities; chest; brain, spinal cord, and nerves; radiology; physical medicine and rehabilitation; anesthesia, gas, and intravenous therapy; and miscellaneous. The material is clearly and concisely presented, attractively printed, and appropriately illustrated. It represents a broad review of current work in many fields of medicine as reported from an outstanding institution.

Encyclopedia of Chemical Technology. Volume 9: Metal Surface Treatment to Penicillin. Edited by Raymond E. Kirk, Head, Department of Chemistry, Polytechnic Institute of Brooklyn, Brooklyn, N. Y., and Donald F. Othmer, Head, Department of Chemical Engineering, Polytechnic Institute of Brooklyn. Assistant editors: Janet D. Scott and Anthony Standen. Cloth. Subscription price $25; single copy $30. Pp. 943, with illustrations. Interscience Publishers, Inc., 250 Fifth Ave., New York 1, 1952.

The ninth volume of this series contains subjects of particular interest to physicians; for example, the brief discussions on the classification, structure, cultivation, heredity, and variation of micro-organisms. Nicotinic acid and nicotinamide, nucleic acids, pantothenic acid, pectic substances, and penicillin are also subjects of medical interest. Topics not directly bearing on medicine but related in either application or interest include nucleonics, with a discussion on the effects of radiation and radiation protection; chemical composition and nutritive value of nuts; osmosis and osmotic pressure; and ozone. Other chapters discuss methanol, chemical microscopy, chemical microanalysis, molasses, naphthalene and its derivatives, nitric acid, nitriles and isocyanides, nitrobenzene and nitrotoluene, nitrogen compounds, chemical nomenclature, nomographs, essential oils, oxidation-reduction, oxygen, paper, and patents. These subjects by no means exhaust the topics that are included. All are presented by authorities in a concise and clear manner.

Manual of Upper Extremity Prosthetics. By staff, Artificial Limbs Project, Department of Engineering, University of California, Los Angeles, California. Edited by R. Deane Aylesworth. Publication of Artificial Limbs Research Project, under supervision of Advisory Committee on Artificial Limbs, National Academy of Sciences—National Research Council, supported by contract with Veterans Administration. Cloth, loose-leaf. No pagination, with illustrations. National Research Council, 2101 Constitution Ave., Washington 25, D. C., 1952.

This manual is the result of the fine work done by the government-sponsored artificial limb program of the department of engineering at the University of California. Through clear descriptions and large illustrations, fitting and fabrication procedures for upper extremity prostheses are concisely presented. Although the manual is written primarily for the limb maker, the physician who prescribes artificial limbs and directs the rehabilitation of those who use them will find this a most useful reference source.

Typische gynäkologische Operationen unter besonderer Berücksichtigung technischer Vorteile. Von Prof. Dr. Siegfried Tapfer, Vorstand der Universitäts-Frauenklinik Innsbruck. Cloth. 32 marks. Pp. 59, with 146 illustrations. Urban & Schwarzenberg, Thierschstrasse 11, Munich 22; Meinekestr. 13, Berlin W. 15, 1952.

This book, containing only 65 pages, describes and illustrates seven gynecologic operations. Included are (1) abdominal supravaginal hysterectomy, (2) abdominal total hysterectomy and removal of the adnexa, (3) the Wertheim radical operation, (4) anterior and posterior vaginal plastic operation with plication of the vesicovaginal connective tissue and high amputation of the cervix, (5) vaginal hysterectomy, (6) Schauta-Amreich radical vaginal total hysterectomy and removal of the adnexa, and (7) operative treatment of carcinoma of the vulva. All the illustrations were drawn by a physician and are well done and instructive, but too many steps have been omitted. Gland dissection is not shown in the drawings of the Wertheim operation, probably because the author says he does not routinely remove all glands. Removal of the glands is shown, however, in the illustrations of vulvectomy for cancer of the vulva. Since only seven operations are illustrated, this book is far from a complete exposition of gynecologic surgery, but the material included is worthy of serious study by young surgeons.

It's Your Hospital and Your Life! By Lucy Freeman. Public Affairs Pamphlet no. 187. Paper. 25 cents. Pp. 32, with illustrations. Public Affairs Pamphlets, 22 E. 38th St., New York 16, 1952.

This pamphlet describes the development of the hospital and its services from the medieval European almshouses to the complex community the modern American hospital is today. Eight pictographs present statistics on hospital population, growth, services, costs to the patient, average length of stay, finances, and hospital insurance. The accomplishments, problems, and new projects being undertaken and incorporated into present-day hospital programs are discussed along with the community's responsibility in maintaining its hospital. The author has succeeded in presenting the "inside" story of the community hospital in an interesting, readable manner. This booklet interprets the need for, the function, and place of the hospital in community life for the layman.

Psychology of Physical Illness: Psychiatry Applied to Medicine, Surgery and the Specialties. Edited by Leopold Bellak, M.D., Clinical Assistant Professor of Psychiatry, New York Medical College, Flower and Fifth Avenue Hospitals, New York City. Cloth. $5.50. Pp. 243. Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 1952.

This book is a carefully integrated product composed of chapters by the editor and 15 other contributors. The psychological implications of diseases encountered in general practice, internal medicine, general surgery, surgical specialties, pediatric practice, dermatology, physical medicine and rehabilitation, and dentistry are presented. The reader will find the practical applications of basic psychological dynamics as presented in this book valuable adjuncts to diagnosis and treatment of somatic disease and trauma. The physician who has a moderate understanding of the psychology of physical illness probably will find little in this text he does not know or has not read elsewhere. For the uninformed, however, the book provides an excellent introduction to the subject.

QUERIES AND MINOR NOTES

NUMBNESS FOLLOWING SYMPATHECTOMY

To the Editor:—*Four years ago, a 49-year-old white woman had a dorsal sympathectomy, with removal of a portion of the adrenal glands, for malignant hypertension (250/130). Since then she has been well, with a blood pressure of 120 to 130 mm. Hg systolic and 70 to 80 mm. Hg diastolic. She is much disturbed by severe numbness and tingling of the arms and hands and severe aching in both legs. These symptoms are much worse at night, and she is unable to sleep more than two or three hours at a time. Can you suggest treatment?* *James E. Townsend, M.D., Murraysville, Pa.*

Answer.—This patient's response to a lumbodorsal sympathectomy seems excellent. The residual numbness, tingling, and pain need further investigation. They could be due to an intercostal and lumbar neuritis, which, however, usually subsides 4 to 6 months after the operation. The condition could be due to residual sympathetic activity in nondenervated areas, and this could be determined by tests of sweating or skin resistance. The symptoms could also be due to a polyneuritis of nutritional origin, to some lesion in the gastrointestinal tract or liver, or to arteriolar sclerosis of posterior root ganglions. Treatment would logically follow when the mechanism of these symptoms is elucidated and could best be carried out by the group who performed the sympathectomy.

CONTROL INJECTIONS IN GAMMA GLOBULIN INVESTIGATIONS

To the Editor:—*The prophylactic injection of human gamma globulin is being credited with protective action against poliomyelitis. Why was gelatin used as the substance in the control injections? Gelatin is a nonantigenic protein. Can the same be said for human gamma globulin? If not, then it would seem that beta and gamma globulins of equine source would be suitable in the control injections. Such globulins, unrelated to poliomyelitis in man, can be made available in adequate quantities.*

George F. Fasting, M.D., New Orleans.

Answer.—Gamma globulin from any species, human or other animal, is antigenic when injected into a heterologous species. Therefore, equine beta and gamma globulin would not have been suitable for control purposes in man. Gelatin was used as a control material because it is nonantigenic, is known to be safe, and in the concentration used had the appearance and viscosity of gamma globulin.

PERSPIRATION AFTER DRINKING COFFEE

To the Editor:—*A patient complains that during the past three years, following ingestion of coffee, he has noticed that a profuse, generalized perspiration appears. This does not follow the ingestion of other hot liquids and is unassociated with the intake of other caffeine-containing drinks. Is there any pharmacological evidence that hot coffee will produce this reaction?* *M.D., Tennessee.*

Answer.—If the observed perspiration is not due to caffeine, hot liquid, or a combination of the two factors, the patient may be sensitive to the volatile, oily constituents of coffee. These constituents can produce local irritation and reflex stimulation. It would be expected, however, that, like condiments, they would most likely give rise to a reflex, gustatory sweating, ordinarily confined largely to the face.

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically so stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.

NOCTURNAL ERECTIONS

To the Editor:—*An engineer, aged 45, in good general health, complains of transitory painful nocturnal erections, bad enough to wake him from sound sleep and completely relieved by urination. The symptoms have been present for 14 years. There is slight hesitation at the beginning of urination at the time of erection. During the day no symptoms occur. There is no history of venereal infection. The patient's sex life is normal, the results of physical examination were grossly normal, and the prostate and urine are normal.*

Joseph Ferrucci, M.D., Framingham, Mass.

Answer.—The treatment of nocturnal erections may be difficult, since in many instances no definite cause can be found. Infection involving the bladder, prostate, or seminal vesicles occasionally may be an etiologic factor, but in this case it is apparently excluded. In a few cases, prostatic massage and deep instillation of silver nitrate may be of some value. Diethylstilbestrol, 1 mg., given once daily or some form of sedative may be administered over a period of several weeks. In most instances, however, such therapy is unavailing. In the majority of cases the symptom accompanies psychoneurosis, and a psychiatric examination is indicated.

TESTING NEW EMPLOYEES FOR SENSITIVITY TO RESIN DUST

To the Editor:—*A factory that manufactures plastic articles is having trouble with a dermatitis among the employees. The personnel department believes that a phenol-formaldehyde resin in the dust with which the employees come in contact is responsible. Is there a simple skin test to rule out new employees who will become sensitized to this dust?*

Charles B. Porter, M.D., Benton Harbor, Mich.

Answer.—Tests for contact dermatitis are made by the patch technique. If nonirritating chemically, the undiluted material is placed on a small piece of gauze and attached to the skin with adhesive tape. The patch is removed after 24 to 48 hours. A positive reaction varies from redness to redness with edema, vesiculation, and bullous formation. The test must be controlled by negative reactions in normal persons. It is likely that the plastic involved in this industry will produce contact allergy; however, generally speaking, it will require fairly long repeated contact before the person becomes sensitized. Hence, preemployment tests would be of little value, since virtually none of those destined to become sensitive will show reactions to this material. It may be possible to spot persons who have a tendency to acquire contact sensitivity by patch-testing them with a routine selection of contact allergens (see Feinberg, S. M., and others: Allergy in Practice, ed. 2, Chicago, Year Book Publishers, Inc., 1946). A positive reaction to one of these substances may indicate that the person is prone to acquire contact allergy.

UNDESCENDED TESTICLE

To the Editor:—*What should be done for a boy 15 years old with one-sided cryptorchism? His condition was bilateral, but four years ago his left testicle came down after gonadotropic treatment (antuitrin S®). The boy is otherwise normal and healthy, except for a slight underdevelopment of his already descended testicle.*

F. Vela-Gonzalez, M.D., Monterrey, Mex.

Answer.—The right testicle should be brought down into the scrotum by the usual surgical procedure. It is possible that spermatogenesis may not develop in a youngster who has had bilateral undescended testes almost to the age of puberty. It is generally agreed that an inguinal testis is more vulnerable to trauma and neoplastic involvement.

DISINFECTION OF ROOM AFTER CASES OF INFECTIOUS HEPATITIS

To the Editor:—*I was called to see a student in a room at a college in India. I had started taking his history when two of his relatives came and removed him to a hospital. I never had a chance to examine him. All that I saw were his sheet and shirt bearing deep yellow patches, evidently from his sputum. His eyes, skin, and nails were of deep yellow hue. The student died on Sept. 8, 1952, in the hospital, probably of acute infectious hepatitis. This lad lived in that room two months with another student. Please let me know if his room at the college will be a source of infection to others who might occupy it. If so, how should the room be disinfected? Is it necessary to disinfect at least two more rooms on either side of it?*

M.D., U. P. India.

Answer.—There is little likelihood that a room (or consequently an adjoining room) that has been occupied by a patient with acute infectious hepatitis will be a source of danger to others. Food, including milk and water, are the chief vectors of the virus. Transmission of the disease from person to person may occur by means of hypodermic needles or syringes that have not been autoclaved. Ordinary boiling of surgical instruments is not sufficient. Although the virus may be found in the intestinal tract, disinfection of body discharges is not customary. It has been stated that the virus does not occur in the sputum. Patients with infectious hepatitis are usually admitted to general hospitals and treated according to medical aseptic precautions, with emphasis on autoclaving of needles and syringes but no terminal disinfection of premises occupied by the patient.

MARIHUANA

To the Editor:—*Please send information on the identification of marihuana, as found in cigarettes, to be used for medical legal testimony.*

Harold W. Morgan, M.D., Mason City, Iowa.

Answer.—Several chemical tests for the identification of marihuana (Cannabis) have been reported in the literature. The one used most frequently, the so-called Beam test, is described in detail by J. R. Matchett and his associates in the Bureau of Narcotics and the United States Department of Agriculture (*J. Am. Pharm. A.* **27**:29 [Jan.] 1938; *J. Am. Pharm. A.* [*Scient. Ed.*] **29**:399 [Sept.] 1940). References to other reports on chemical tests proposed for the identification of Cannabis are listed below. Most of the authors of the reports listed recognize the limitations of chemical tests as a means of positive identification of Cannabis, and it is generally conceded that microscopic examination of plant material affords a more reliable method of identification. This preference for microscopic detection is expressed in the book edited by Simmons and Gentzkow (Laboratory Methods of the United States Army, ed. 5, Philadelphia, Lea & Febiger, 1944), in which it is stated that if a positive identification is made microscopically, chemical identification is usually unnecesary. Methods of microscopic identification are described in the pamphlet "Marihuana, Its Identification," issued by the Bureau of Narcotics, United States Treasury Department (1938).

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CRAMPING PAIN OF SKELETAL MUSCLE

To the Editor:—*Please evaluate the role played in cramping and rheumatic pain of skeletal muscle by each of its neural components, which include (a) the vasomotor and sensory supply of its vasculature, (b) the motor and the proprioceptor supply of the muscle fibers, and (c) the sympathetic supply of the muscle fibers, which remains in dispute.*

R. R. Gutstein, M.D., Kendalville, Ind.

Answer.—Muscles are equipped with three types of somatic proprioceptors: the muscle spindle, the Golgi tendon receptors, and the pacinian corpuscles. Muscle spindles have been regarded as "stretch afferents" (Fulton, and Pi-Suner: *Am. J. Physiol.* **83**:554, 1928), whereas the tendon endings are also responsive to stretch but cannot make a distinction between active and passive tension as the muscle spindle does. The pacinian end organs are responsive to mechanical deformation and are regarded as endings for deep pressure sensation. Their accessory unmyelinated innervation is probably vasomotor in origin. There are also free nerve endings in muscle, but they seem to be restricted to the blood vessels and aponeurotic sheaths; muscle pain can thus be caused by spasm or rupture of the smaller vessels that carry this nociceptive innervation (Kellgren: *Clin. Sc.* **4**:35, 1939). Quantitative studies of visceral pain produced by the contraction of ischemic muscle have been reported by Harrison and Bigelow (*Proc. A. Res. Nerv. & Ment. Dis.* **23**:155, 1943). The only autonomic endings traceable to sensory end organs in muscle are those that accompany the free endings to the blood vessel and those to the pacinian corpuscles (Creed, R. S., and others: Reflex Activity of the Spinal Cord, New York, Oxford University Press, 1932). The simplest reaction of the nervous system is the segmental spinal reflex involving an afferent neuron and a motor unit. Initiation of afferent stimuli may occur by local inflammatory processes, rupture, or spasm of blood vessels and anoxia of sensory nerve endings. Such stimuli will then initiate reflex motor phenomena such as one may see in the tense, painful night cramps of a calf muscle. Repeated stimuli, sensitization of spinal neurons, or central inhibition may intensify the reflex. In chronic irritative lesions, such as occur in arthritis of the knee joint, chronic flexor contractures and muscular atrophy may be seen, owing to the principle of reciprocal innervation of the extensor muscles. Pain on changes of the weather is probably mediated by the autonomic nervous system and its effect on blood supply. Sympathetic innervation definitely is not responsible for the maintenance of skeletal muscle tone, which depends on a proprioceptive reflex arc involving the somatic system alone.

LUNG CANCER

To the Editor:—*An exploratory operation was done on a patient with cancer of the lower lobe of the right lung with infiltration of the mediastinal glands. A biopsy of the gland showed presence of carcinoma. The surgeon did not attempt to remove the lung, and he closed up the chest. The condition of the patient is deteriorating owing to pain and starvation. Roentgenograms do not reveal any changes since the operation, except perhaps more glandular infiltration. I advised building up the patient with transfusions, reoperating with the object of removing the lung, and then giving deep x-ray therapy for the glandular involvement. What is your opinion?*

Aaron N. Gorelik, M.D., Bronx, N. Y.

Answer.—It is assumed that the surgeon who operated on this patient had the opinion that it would be impossible to remove the lung and the mediastinal tissues involved by the cancer. It is doubtful that the lung could be safely removed even if the patient could be built up very much by blood transfusions and in other ways. Moreover, the involvement of the mediastinal glands is not likely to be changed much by deep x-ray therapy. In addition, extensive x-ray therapy of the mediastinum would almost certainly cause some radiation damage in the remaining lung. Of course, some x-ray treatment given to the patient now may relieve his pain somewhat. If it should not, neurosurgical procedures directed at the relief of pain might be used, even perhaps a lobotomy.

PAROXYSMAL AURICULAR TACHYCARDIA

TO THE EDITOR:—*A patient used quinidine, 3 grains (0.19 gm.) every three hours, for several years for paroxysmal auricular tachycardia. Two years ago he had to stop using it, and began taking anasarcin® (a diuretic containing scillipicrin, scillitoxin, S. E. Oxydendrum arboreum, S. E. Sainbucus canadensis, and diluents). He has been bedfast for six months with terrific sweating on the back and a fast heart beat and is now using powdered posterior pituitary snuff twice a day. Please advise proper treatment.* *M.D., Oklahoma.*

ANSWER.—It is assumed that the diagnosis of paroxysmal auricular tachycardia has been confirmed by an electrocardiogram taken during a bout of rapid heart action. It is not stated when quinidine was discontinued. Most of the unpleasant side-effects of quinidine therapy, such as nausea, vomiting, diarrhea, or tinnitus, can be avoided by reducing the dose of the drug. Occasionally, it may have to be abandoned because it proves ineffective in preventing cardiac irritability when used in smaller amounts or because of the appearance of true drug sensitivity, with fever or thrombocytopenic purpura. Under these circumstances, other therapy may be necessary to prevent severe or prolonged attacks. Possible precipitating or aggravating factors, such as fatigue, excessive use of coffee, tea, or tobacco, overeating, constipation, heart failure, or thyrotoxicosis should be eliminated. Digitalization sometimes proves helpful. Procaine amide ("pronestyl") hydrochloride, 0.25 to 0.5 gm. taken by mouth four to six times a day, may also be tried. Other possibilities include the use of quinacrine (atabrine®) or diphenhydramine (benadryl®). Posterior pituitary snuff is not to be recommended, since it has been shown that the effect of posterior pituitary extract on man is to decrease pulse rate and cardiac output for a brief period only; there follows an increase in heart rate and cardiac output of more prolonged duration. Furthermore, the hormone may have an undesirable effect on the gastrointestinal tract, causing increased peristalsis, nausea, belching, cramps, and a desire to defecate.

VIRUS INFECTIONS

TO THE EDITOR:—*I have a number of patients who complain of dizziness and/or tinnitus following so-called virus infections. Is there any connection, and is there any treatment?* *M.D., Michigan.*

ANSWER.—Regardless of whether such infections as those mentioned are designated virus infections, influenza, or the common cold, the symptoms and possible complications are likely to be much the same. In each instance the oropharynx is more or less involved. If the attack is severe, the ear may be affected, or inflammation and swelling about the eustachian tube may block the canal and account for tinnitus. Dizziness and tinnitus are not rare complaints in influenza patients. Possibly some involvement of the labyrinth accounts for the former. The ear drums may appear to be normal. Treatment consists of administration of an appropriate antibiotic and the local application of an ephedrine type preparation to shrink any edema about the orifices of the eustachian tubes.

TREATMENT OF CORONARY DISEASE

TO THE EDITOR:—*How safe and successful is the operation as performed by Dr. Claude Beck at Western Reserve University for coronary artery disease? Also, please discuss the merits and rationale of intravenous heparin sodium injections in the treatment of chronic coronary atherosclerosis.* *M.D., Kansas.*

ANSWER.—The seriousness of the Beck operation depends on the seriousness of the patient's condition. With patients who are seriously incapacitated and in patients in whom the heart has sustained extensive damage, the danger of the operation is considerably higher than in those patients who have had an infarction but who are able to get around and do some work. In this group the mortality should be somewhere between 10 and 20%. As of December, 1952, there was only one death in the last seventeen patients operated upon and this patient had extensive damage in the myocardium. The clinical results in those patients in whom a patent graft was obtained are very good; 88.2% had less pain after the operation, and 70% were better able to carry on their work. Some of the patients were completely free of pain and are able to do full-time work. Intravenous injection of heparin for the treatment of coronary disease seems to give benefit to about 25% of the patients in whom it is used. Heparin has an effect on the large lipoprotein molecule, as shown by Gofman, and breaks these molecules into smaller molecules that are less likely to lead to atherosclerosis. The subject is controversial, and the use of heparin has not received universal favor.

DIET FOR PATIENT WITH ILEOSTOMY

TO THE EDITOR:—*Please discuss a diet for a patient with a permanent ileostomy.* *M.D., Pennsylvania.*

ANSWER.—The discharges from an ileostomy at first are usually liquid and corrosive on prolonged contact with the skin of the abdominal wall. In time, however, the lower ileum takes over, in part, the absorptive function of the colon, and the ileal discharge assumes a pasty consistency. It is sometimes advisable to prescribe a relatively fat-free bland diet for several months after the construction of the ileostomy to lessen the corrosive properties of the ileal content. Ingestion of raw fruits and vegetables may be curtailed during this period. The administration of a hygroscopic agent, such as psyllium hydrophilic mucilloid with dextrose (metamucil®), is sometimes of considerable value. After the first few months, most patients will tolerate a liberal, unrestricted diet without difficulty.

THYMECTOMY FOR MYASTHENIA GRAVIS

TO THE EDITOR:—*I would like to comment on the answer to the query on thymectomy for myasthenia gravis published in* THE JOURNAL, *Jan. 10, page 166. The removal of the thymus gland in selected cases of myasthenia gravis is an operation of considerable value. Thymectomy frequently provokes a prolonged or, sometimes, a complete remission. In other patients, the results are only partially satisfactory, but in about 40%, following operation, there are no or only minor residual symptoms. In another 25% the results are good, so that 65% of selected patients are wholly or in a large part benefited. Although thymectomy may not cure, no other form of treatment is followed by remissions at such a favorable rate. Under controlled conditions, the operation is relatively safe, and the operative mortality in skilled hands is minimal. It should never be done as an emergency measure. The patient should be well adjusted on orally administered neostigmine preoperatively over a period of months. This level of medication may be maintained under anesthesia by giving 0.5 mg. of neostigmine methylsulfate by continuous intravenous drip for each 15 mg. tablet of neostigmine bromide required over an equal period. Improvement after thymectomy may be seen in a few days, but in most cases there is a delay of weeks or even months. Occasionally, remissions do not occur until the second or third postoperative year. Thymectomized patients usually run a steady course, with life expectancy increase and dose schedules relatively fixed. Pathological changes in the thymus are now thought to be characteristic of the disease. Most patients over 50 years of age, those under 5, and all that are well adjusted on a small daily intake of neostigmine are considered by most observers at present as not suitable for thymectomy. Also, patients who have marked waves of spontaneous remission and relapse should be excluded until they reach a relatively level course, with satisfactory maintenance on neostigmine. Young patients and those whose symptoms have been evident for only a short time, do best after operation, but patients of this type also respond well to neostigmine therapy, and some may have complete spontaneous remissions without treatment. More reports are needed before the operation can be accepted as a method of treatment for every patient with myasthenia gravis, but its value is now well recognized by those who have studied large series of thymectomized patients over a long postoperative period.*

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